

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**FOREST TRAILS AND LANDINGS**

(Ac.)

**CODE 655**

**DEFINITION**

A temporary or infrequently used route, path or cleared area within a forest.

**PURPOSE**

This practice is used for one or more of the following purpose(s):

- Provide routes for temporary or infrequent travel by people or equipment for management activities.
- Provide periodic access for removal and collection of forest products.

**CONDITIONS WHERE PRACTICE APPLIES**

Trails and landings including skid trails are applicable on forest land. They typically connect to an Access Road (NC Practice Standard 560).

Use ACCESS ROADS – NC Practice Standard 560, for trails/travel-ways that will be designed and used frequently or repeatedly and remain permanently for vehicular traffic.

**CRITERIA**

Use the following criteria in planning and applying this practice. The general criteria apply to all Forest Trails and Landings. Additional criteria may apply based on the intended purpose(s) of the practice.

**General Criteria Applicable To All Purposes**

Design and Construction - Use the current [NC Forestry BMP Manual](#) for specific design information, drawings, illustrations, etc. for planning/sizing/constructing forest roads/trails/landings and their associated

water and sediment control practices including water breaks, broad-based dips, rolling dips, water bars, cross-road pipe drainage, temporary culverts, stream crossings and bridges.

Trails and landings will be of a size, gradient, number and location to accomplish the intended purpose for expected traffic and equipment.

Trails and landings shall be located and configured to minimize adverse onsite and off-site impacts such as accelerated erosion, slope failure, riparian area degradation, stream channel/streambank damage, hydrology modification, aesthetics; and, unacceptable damage to advance tree regeneration, residual tree growing stock or wildlife habitat.

Where possible locate forest trails and landings on gently sloping sites outside of floodplains/wetlands and away from streams/stream management zones (SMZ). Where trails must cross streams, SMZ's or water bodies, effective water control measures must be planned to protect streams/water bodies. Any road/trail fills should not restrict flow patterns or volumes of water movement through forested wetlands.

Locate or construct forest trails and landings on stable areas with adequate drainage. Trails and landings shall not be located or constructed on soils subject to mass movement or landslides.

Timing and use of equipment will be appropriate for site and soil conditions to maintain site productivity and minimize soil erosion, displacement and compaction

Construction slash/debris will not be left in

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#).

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locations that will adversely affect wetlands, riparian areas or stream aquatic habitats.

Drainage and erosion control measures for trails/landings shall be used and located to minimize water runoff, erosion and compaction/rutting.

Bridges, culverts, or stable at-grade crossings are to be used when crossing streams. They will be designed to avoid or minimize changes in the natural stream channel morphology. Stream crossings should be made at right angles wherever possible.

Protect against locally invasive and noxious plants. Refer to PEST MANAGEMENT – NC Practice Standard 595 if pesticides are used.

**Additional Criteria to Provide for Temporary or Infrequent Travel by People for Management Activities**

Layout and size of trails will depend on the size of equipment needed to traverse the trail for management. Equipment for forest management activities ranges in size from All Terrain Vehicles to bulldozer, but generally will not be as large as equipment used for harvest of forest products.

Trails into remote forest stands should accommodate locally used firefighting equipment when needed for fire suppression.

**Additional Criteria to Provide Periodic Access for the Removal and Collection of Forest Products**

Minimum access road width will normally be 10-14 feet, possibly more for a single track of forest harvest equipment. Width will be increased as necessary at curves and turnouts.

Washed crushed stone (1½ - 3 inches, ASTM C 33 size number 3 or 4) or other similar protection should cover the last 100 feet of a primary trail before it intersects a public paved highway to prevent mud from causing driving hazards. This section of trail that joins a public highway should be carefully located to allow adequate sightlines for trucks entering and exiting a forest harvest site.

Landings or logging decks should be located in advance of trail construction. Trail approaches to the landing should have a low grade. Forest

product type, loading method, and type of loading/hauling equipment will dictate landing size.

Spread slash/limbs across landings/logging decks during harvest operations to provide soil cover and help prevent sediment runoff.

**CONSIDERATIONS**

A permit may be required from the US Army Corps of Engineers if fill material is placed in a stream.

Forest trails (skid, haul) and landings (loading decks) are the forestry activity that can cause increased erosion and sediment yields unless location/construction is well planned.

Preplanning forest trails and landings can save time and money. A preharvest plan should be developed showing approximate locations of harvest trails, potential log landings, sawmill sites, stream crossings, etc. along with streams, wetlands and other sensitive areas that need to be considered. Timing of harvest should be included. Harvesting the furthestmost timber first allows trails to be stabilized with slash/etc as activity progresses toward as landing or deck.

Forest trails and landings can be constructed and stabilized a year or more ahead of planned harvest or management activities.

Minimize the number and size of landings/logging decks.

In steep terrain, locate landings as high on the slope as practical and use a fan pattern of primary skid trails that converge at the landing. This disperses water runoff over a larger area.

Use existing trails where practical, unless existing trails do not meet current requirements of this standard.

Crossings over defined channels are the most critical points on a trail use extra care planning in these areas.

Consider timber bridges to cross streams where temporary culverts are not practical.

Consider all parts of a constructed trail/landing when planning erosion control measures: road top, fill slopes, cut slopes, ditches, etc.

Locate landings and trails to preserve aesthetic qualities.

Consider impacts to wildlife from potential fragmentation. Creation of openings caused by trails and landings through forestland can benefit early successional and edge species yet be detrimental to forest interior species.

Landings and trails, particularly upon closure, may be used and managed for wildlife food and cover (refer to UPLAND WILDLIFE HABITAT MANAGEMENT – NC Practice Standard 645 and EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT – NC Practice Standard 647).

Consider using native species for vegetation and protect against establishment and spread of invasive species.

Properly located landings and trails of sufficient width may be utilized and managed as firebreaks.

The landowner will usually be responsible for trail maintenance after harvest activity.

Consider cultural resources and environmental concerns such as threatened and endangered species of plants and animals, natural areas and wetlands. *This practice has the potential to affect National Register listed, or eligible, significant cultural resources (CULTURAL RESOURCES INFORMATION - NC, FOTG Section II). Follow NRCS state policy for considering cultural resources during planning.*

## PLANS AND SPECIFICATIONS

Specifications for applying this practice and protection of the site shall be prepared and recorded using approved specification sheets, job sheets, technical notes, narrative statements in the conservation plan (including references to plans prepared by other agencies or consultants), or other acceptable documentation.

Minimum documentation will include:

- map showing general location of forest trails and landings; additionally in forest land the map should delineate:
  - streams and water bodies
  - required filter strips/SMZ's
  - additional sensitive areas such as critical

areas or cultural resources that need to be considered

- documentation of the planned level and interval of use that impacts design and closure requirements.
- tree harvest or forest management plan prepared by a registered forester when available.
- statement requiring compliance with all federal, state and local laws.
- required operation and maintenance instructions

## OPERATION AND MAINTENANCE

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

- Conduct periodic inspections of landings and trails during use, especially near streams, water bodies, wetlands, etc.; repair as necessary by:
  - constructing additional erosion, sediment and water control practices or structures where and as needed to alleviate problems identified during active use/service
  - reworking areas to remove ruts
- Restrict traffic and delay hauling when soil moisture conditions become too wet
- As silvicultural activities are completed, shape and smooth trail and landing surfaces as needed, ensure that drainage systems are functioning, and provide a ground cover on bare areas
- Maintain landings and trails used as firebreaks to accomplish this purpose
- Restrict access to landings and trails when and where needed for erosion control, safety, liability, and reduced maintenance costs (refer to ACCESS CONTROL - NC Practice Standard 472)

Retire landings and trails no longer needed, and not used as firebreaks. Select an

appropriate closure level based on severity of environmental concern associated with existing roads, trails, and landings; future access requirements; and short-term disturbance effects resulting from closure and treatment activities (Refer to ROAD, TRAIL, LANDING CLOSURE AND TREATMENT – NC Practice Standard 354).