

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**ROAD/TRAIL/LANDING CLOSURE AND TREATMENT**

(Ft.)

**CODE 654**

**DEFINITION**

The closure, decommissioning, or abandonment of roads, trails, and/or landings and associated treatment to achieve conservation objectives.

**PURPOSE**

This practice is used to minimize various resource concerns associated with existing roads, trails, and/or landings by closing them and treating to a level where one or more the following objectives are achieved:

Controlling erosion (road, sheet and rill, gully, wind) and minimizing off-site movement of chemical residues, sediment, storm runoff, and particulate matter;

Restoring land to a productive state by reestablishing adapted plants and habitat (wildlife food, cover, and shelter), reconnecting wildlife habitat and migration corridors including streams and riparian areas, and controlling noxious and invasive species;

Reestablishing drainage patterns that existed prior to construction of the road, trail, or landing to restore the form and integrity of associated hill slopes, channels and floodplains and their related hydrologic and geomorphic processes;

Minimizing human impacts to the closure area to meet safety, aesthetic, sensitive area protection, or wildlife habitat requirements.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice is applied on roads, trails, and landings designated for closure to include associated cut/fill slopes, sidcast areas and associated drainage structures.

**CRITERIA**

Closed roads, trails, and landings will be treated at one of three designated levels:

- 1) Closure and treatment to a level that facilitates future use for management activities.
- 2) Closure, treatment, and reconnection to applicable drainage networks (usually involves culvert removal which limits potential for future use).
- 3) Closure, treatment to level 2 above, reshaping the treatment area to natural land contours, and stabilizing (with native plants when possible) and restoring hydrologic conditions to the extent possible and practical.

Select treatment level based on 1) severity of environmental concern associated with existing roads, trails, and landings; 2) future access requirements; and 3) short-term disturbance effects resulting from closure and treatment activities.

Treatment shall result in a physical condition and configuration that controls erosion associated with the road/trail/landing and protects water quality. When the existing road/trail/landing will not be treated to level 3, use the current [NC Forestry BMP Manual](#) for specific design information, drawings, illustrations, etc. for planning, sizing, and constructing associated water/sediment control practices (like road cross section smoothing, water breaks, broad-based dips, rolling dips, water bars, etc).

Use accepted tools to evaluate and prepare practice design and specifications to include erosion prediction models, hydrology and hydraulics modeling, soil mechanics and slope stability modeling, and wildlife/habitat suitability interactions.

Closure and treatment shall minimize adverse onsite and off-site effects from sediment,

particulate matter/dust, concentrated storm runoff on unprotected areas, unstable slopes, soil mass movement, riparian area/wetland degradation, stream channel/stream bank damage, hydrologic modification, or other water resource impairment.

Seeps or springs associated with treated areas shall not be buried or filled, and shall be reconnected to appropriate drainage networks. Concentrated spring flow channels shall be armored or planned for acceptable non-erosive flow.

Construction techniques and equipment types will be sufficient to implement the design treatment and safely minimize soil erosion, displacement, compaction, degradation and damage to adjacent areas.

All levels of treatment will utilize appropriate measures such as, but not limited to:

- Permanent or temporary traffic barriers and caution signage. (See Access Control (472) – NC, FOTG Section IV).
- Excavation and reshaping of roads, trails, landings, and drainage ways to natural conditions including culvert removal and reconnection of the site areas to appropriate drainage networks.
- Ripping to improve infiltration and vegetation root growth.
- Topsoil stockpiling and respreading and, in some cases, topsoil importing.
- Rolling grades and other practices to disperse runoff off selected road and trail segments to be closed (see NC Forestry BMP Manual).
- Control of nuisance, noxious or invasive species.
- Reestablishing adapted vegetation including necessary mulch and soil amendments.

Treatments to restore natural topography and surface hydrology will result in stable slopes and be compatible with existing land uses in the vicinity.

Minimize indirect adverse impacts or effects of the practice on species with declining populations, particularly aquatic species in streams or wetlands downslope of project area.

Sites containing hazardous material shall be cleaned prior to the establishment of this practice

following all local, state, and federal regulatory requirements. Appropriate actions to clean sites suspected of containing hazardous wastes shall be based on soil tests.

Utilize a dust palliative or other dust control method(s) to control emissions of airborne particulate matter from bare and disturbed areas during closure and treatment operations.

Design, construction criteria, and specifications of other practices used in combination with this practice shall be integrated and compatible to conduct closure and treatment activities, and to achieve specified final planned conditions and configuration. Criteria for design of components not addressed in NRCS practice standards shall be consistent with professional forestry practice or engineering guidelines.

## CONSIDERATIONS

For roads, trails, or landings deemed unsuitable as candidates for closure and treatment, consider specifying upgrades and operation-maintenance provisions to appropriate existing practices, such as Access Road (560) or Forest Trails and Landings (655), to achieve conservation objectives. In these cases, install complementary practices and measures concurrently while upgrading road, trails, and/or landings.

Use bulk density tests on compacted areas at various depths to assure treatment specifications are adequate to reestablish hydrologic function and vegetation.

Use native species when establishing vegetation, especially those having multiple values, e.g., biomass, nuts, fruit, browse, nesting, and aesthetics. Avoid using introduced or exotic species that could become nuisances.

In areas where steepness of slope and severity of cut and fill operation preclude returning sidecast to create a rooting medium, assess the road base for ripping and usage as a rooting medium. If not suitable as a rooting medium, suitable haul-in topsoil/fill material may be needed. Assure that such material is free of weeds seeds and/or contaminants.

Road sites are typically nutrient poor. Consider appropriate soil amendments and/or organic matter to accelerate revegetation.

*This practice has the potential to affect National Register listed, or eligible, significant cultural resources (Cultural Resources Information - NC,*

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*FOTG Section II). Follow NRCS state policy for considering cultural resources during planning.*

## PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved drawings and designs, specification sheets, job sheets, technical notes, narrative statements in the conservation plan or other and other pertinent documentation as needed.

Minimum documentation for this practice includes (as applicable):

- Designated level of treatment with details of sequence and timing of closure-treatment activities.
- Map showing location of roads/trails/landings closed and treated; additionally the map should delineate the following:
  - Gates or other access control barriers.
  - Existing water features that may bisect or impact the practice such as streams, springs, etc.
  - Sensitive areas adjacent to the practice such as cultural resources, wetlands, natural areas, etc. that need to be considered during practice installation
  - Structures or areas that may require specific attention (culverts, steep/unstable banks, hazardous materials cleanup, etc.), if needed.
- Required mechanical treatment and acceptable equipment required, if needed.
- Estimated length of roads/trails/landings treated; additionally calculated area as needed vegetation or other itemization of specific treatment for installation.
- Specifications for seeding and vegetation including:
  - Required site preparation.
  - Plant material or species to be planted, including seeding/planting rates and quality of seed/plant material.
  - Required soil amendments (lime, fertilizer, etc.) and rates.
  - Time and method of planting.
- A statement requiring compliance with all federal, state and local laws.
- Required operation and maintenance instructions.

## OPERATION AND MAINTENANCE

Conduct monitoring and patrolling of the treatment area until work is complete, vegetation is established, and the site is determined to be stable.

Monitor/patrol periodically, and especially after weather events, to determine condition of vegetation, functioning of structures, and possible adverse environmental effects. As needed, conduct the following maintenance:

- Repair/replace access control barriers/structures to prevent damage by vehicles or people.
- Repair damaged structures.
- Replace dying or dead vegetation.

Control nuisance, noxious, or invasive species in the practice area.

## REFERENCES

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