



Trail Fundamentals Definitions

FSH 2309.18 Trails Management Handbook – Zero Code

Trail Fundamentals Terminology

Design Parameters: Technical guidelines for the survey, design, construction, maintenance, and assessment of a trail, based on its Designed Use and Trail Class.

Managed Use: A mode of travel that is actively managed and appropriate on a trail, based on its design and management.

National Quality Standards for Trails: National criteria that establish the level of quality in terms of health and cleanliness, resource setting, safety and security, responsiveness, and condition of facilities for National Forest System trails managed at a full-service level.

Trail Class: The prescribed scale of development for a trail, representing its intended design and management standards.

Trail Fundamentals: The five concepts that are the cornerstones of Forest Service trail management, including Trail Type, Trail Class, Managed Use, Designed Use, and Design Parameters.

Trail Management Objective: Documentation of the intended purpose and management of a National Forest System trail based on management direction, including access objectives.

Trail Type: A category that reflects the predominant trail surface and general mode of travel accommodated by a trail.

- a. **Standard Terra Trail:** A trail that has a surface consisting predominantly of the ground and that is designed and managed to accommodate use on that surface.
- b. **Snow Trail:** A trail that has a surface consisting predominantly of snow or ice and that is designed and managed to accommodate use on that surface.
- c. **Water Trail:** A trail that has a surface consisting predominantly of water (but may include land-based portages) and that is designed and managed to accommodate use on that surface.

Design Parameter Terminology

Clearing Limit: The area over and beside the trail tread that is cleared of trees, limbs, and other obstructions.

- a. **Clearing Height:** The height of the clearing limit measured vertically from the trail tread.
- b. **Clearing Width:** The width of the clearing limit measured perpendicular to the trail.

Cross Slope: The percentage of rise to length when measuring the trail tread from edge to edge perpendicular to the direction of travel.

Design Clearing: The clearing limit determined to be appropriate to accommodate the Managed Uses of a trail.

- a. **Design Clearing Height:** The minimum clearing height determined to be appropriate to accommodate the Managed Uses of a trail.
- b. **Design Clearing Width:** The minimum clearing width determined to be appropriate to accommodate the Managed Uses of a trail.
- c. **Design Shoulder Clearance:** The minimum horizontal and vertical clearance of obstructions (for example, removal of bicycle pedal or motorcycle peg bumpers) immediately adjacent to the trail tread that is determined to be appropriate to accommodate the Managed Uses of a trail.

Design Cross Slope: The cross slope determined to be appropriate to accommodate the Managed Uses of a trail.

- a. **Target Cross Slope:** The cross slope that is determined to be appropriate over most of a trail to accommodate its Managed Uses.
- b. **Maximum Cross Slope:** The steepest cross slope that is determined to be appropriate based on the Managed Uses of a trail and that exceeds the target cross slope of the trail.

Design Grade: The trail grade determined to be appropriate to accommodate the Managed Uses of a trail.

- a. **Target Grade:** The trail grade that is determined to be appropriate over most of a trail to accommodate its Managed Uses.
- b. **Short Pitch Maximum:** The steepest grade that is determined to be appropriate based on the Managed Uses of a trail, that generally occurs for a distance of no more than 200 feet, and that does not exceed the maximum pitch density.
- c. **Maximum Pitch Density:** The maximum percentage of a trail with grades that exceed the Target Grade and that are less than or equal to the short pitch maximum, which is determined to be appropriate based on the Managed Uses of the trail.

Design Surface: The trail tread surface, defined in terms of surface type, surface protrusions, and surface obstacles, that is determined to be appropriate to accommodate the Managed Uses of a trail.

- a. **Surface Type:** A characteristic of the design surface expressed in terms of material type, grading, compaction, and roughness of the trail tread.
 - 1. **Native:** A surface composed of soil, rock or other naturally occurring materials found on or near the trail.
 - 2. **Firm:** A surface that is not noticeably distorted or compressed during the seasons for which it is managed, under normally occurring weather conditions, by the passage of a device that simulates a trail user in a wheelchair.
 - 3. **Stable:** A surface that is not permanently affected by normally occurring weather conditions and able to sustain normal wear and tear caused by the uses for which the trail is managed between planned maintenance cycles.
- b. **Surface Protrusions:** Trail tread imperfections, such as rock, roots, holes, stumps, steps, and structures, that are within the acceptable range of tread roughness and challenge level for the trail and that do not obstruct the Managed Uses of the trail.
- c. **Surface Obstacles:** Trail tread imperfections, such as rocks, roots, holes, stumps, steps, downed logs, and structures, that are beyond the acceptable range of tread roughness and challenge level for the trail and that obstruct one or more Managed Uses of the trail.

Design Tread Width: The tread width determined to be appropriate to accommodate the Managed Uses of a trail.

Design Turn Radius: The minimum horizontal radius required for a Managed Use to negotiate a curve (for example, a switchback, climbing turn, or horizontal turn) in a single maneuver.

Designed Use: The Managed Use of a trail that requires the most demanding design, construction, and maintenance parameters and that, in conjunction with the applicable Trail Class, determines which Design Parameters will apply to a trail.

Trail Grade: The ascent or descent of a trail segment expressed as a percentage of its length.