

Building Trails on Your Property

Ann E. Savage

aesavage@ncsu.edu

Tourism Extension Associate

College of Natural Resources Extension

NC State University

Objectives Today

- **Trail Considerations**
- **Trail Design**
- **Trail Maintenance**
- **Trails & Public**



Trail Considerations

- What are the goals of your property?
 - Management plan
 - Stewardship plan
- How do/could trails support that goal?



Trail Considerations

Identifying Trails Purposes:

- Recreation
- Wildlife viewing
- Controlling wildfires
- Hunting
- Other



Trail Considerations

Before Design 5 Considerations:

- Who is going to use the trail?
 - Walking, hiking, biking, ATVs, horses
- Keeping water off the trail
 - This will help with maintenance cost!
- Wildlife and plant impacts
 - Minimize disturbance, keep as narrow as possible



Trail Considerations

Before Design 5 Considerations Continued:

- Soils
 - Mixture of sand, silt & clay is best
 - Knowing your soil types will help develop solid, stable tread
- Visual appeal
 - Highlighting visual features of your property

Trail Design

Now We Know:

- Who is using the trail
- How the trail will be used
- What the purpose of the trail is

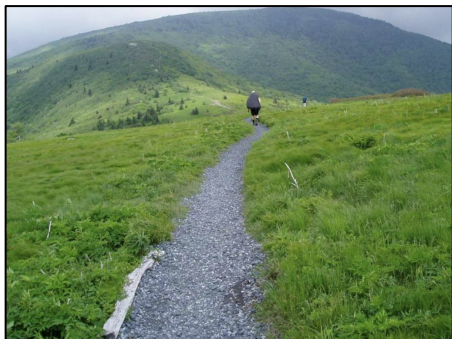
Let's design...



Design your trail with maintenance in mind!

Trail Design

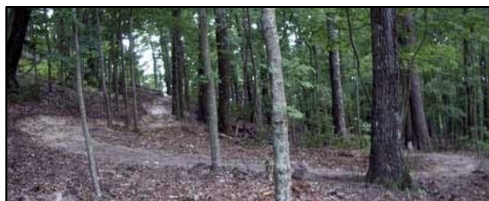
Uses



Backpacking on AT. 24 inches wide 4' x 8' trail corridor



Nature Trail. 6' x 8' trail corridor.



Mtb Trail. 18 to 24 inches wide 6' x 8' trail corridor.

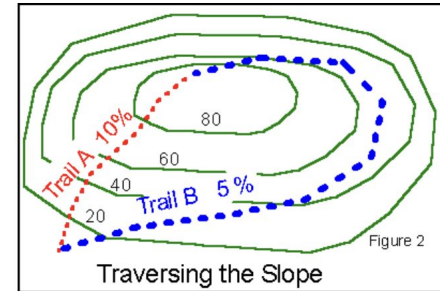
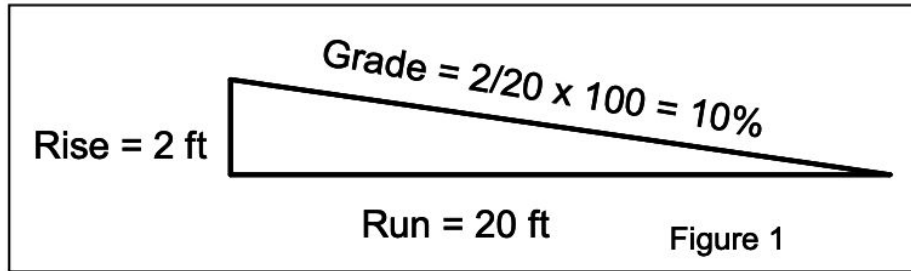


Equestrian Trail. 8' x 10-12' trail corridor.

Trail Design

Utilize topographic maps of your property & a clinometer doesn't hurt...

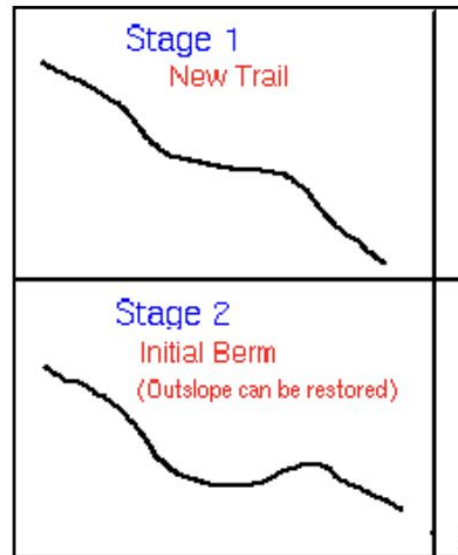
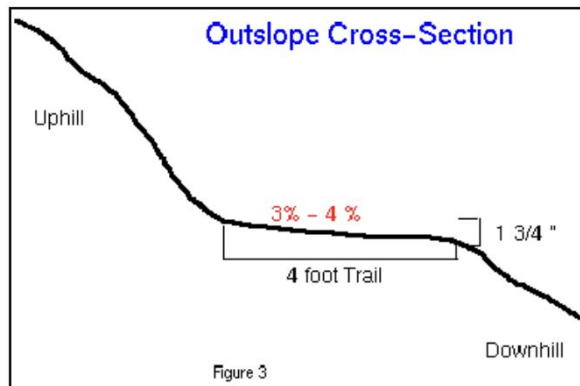
- **Grade** generally should be less than 10%
- **Trail Alignment Angle:** relationship to the contour and fall-line



Trail Design

Utilize topographic maps of your property

- Outslope 3 - 5%
- Water



Trail Design

Grade Dips

- Low maintenance

Trail Grade	Spacing
3-5%	500 ft
7-10%	300 ft
11-15%	100 ft
>15%	<50 ft

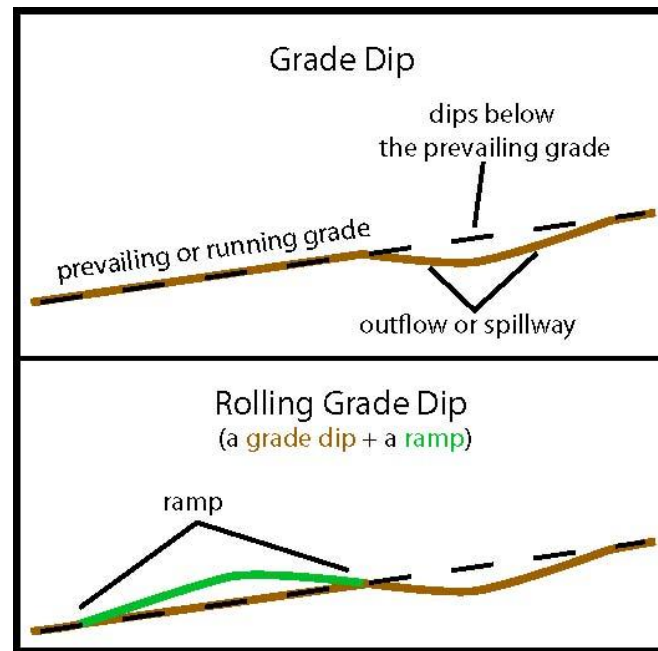


Image Source:
www.nynjtc.org/news/ask-trail-builder-grade-reversals

Trail Design

Site Visits - Take your map and your clinometer & ID

- Points of interest
- Crossings
- Level areas
- Steep hillsides
- Technical spots



Trail Construction

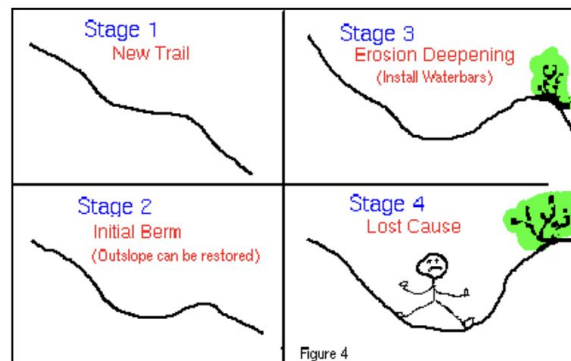
- Materials
 - plastic surveyors tape
 - compass
 - clinometer
 - 25-foot tape measure
- Tools
 - Hand tools
 - Power tools & equipment
 - Rock work.



Trail Maintenance

Water is our main culprit here

- Get on the trail in the rain and observe
- Identify segments in need of rerouting
- Maintaining the outslope
 - Drainage dips, waterbars



Trail Maintenance

- Drainage support - Cleaning
 - *At least 2 times/year*
- Vegetation maintenance
 - Hiking - generally have 6' h x 8' v clearance
 - Blowdowns, branches, tree saplings, ground vegetation
- Safety



Image source: National park Service

Trails & Public



Trails & Public: Active

1995 legislation set to protect those opening up their property for free access to land for recreation and education

Several important exceptions:

1. Must warn & protect against attractive nuisances on property
2. Must inform invitees of artificial or unusual hazards of which they have knowledge

Trails & Public: Active

Liability limitations don't apply:

3. To instances where an invitee uses the land for a purpose for free use of land that is typically at a charge
4. When the extension of an invitation or the granting of permissions for commercial enterprise

Trails & Public: Active

Hosting people on your property

- Liability insurance
- Proper posting
- Warning users
- Fencing or removing an attractive nuisance

Trails & Public: Passive

- Tying into trail systems
 - Easements
 - Conservations organizations
 - [NC State Trails](#)
 - Purchases

Trails & Public

Preparing for People

- Interactions with people
- Parking - entrances, exits
- Trash receptacles
- Bathrooms & other infrastructure
- Signage - interpretive, setting boundaries
- Plans for emergency

[The Farm-Based Education Network](#), UVM, Shelburne Farms

Trails & Public

For North Carolina landowners, the best protection against liability is appropriate posting of lands, exercise of reasonable precautions in allowing land use, fencing or removing attractive nuisances, warning users about dangers, carrying appropriate and adequate liability insurance, and ***seeking competent legal advice*** before entering into any written agreements

Trail Resources

American Trails - research, resource, webinars

- Webinar upcoming 12/7: [Trail Planning & Designing: Foundations of Success](#)

Resources from this presentation:

- [Considerations for Trails on Your Property](#)
- [Basic Elements of Trail Design and Trail Layout](#)
- [Trail Design & Maintenance](#)
- [Land Ownership Liability in NC](#)

Thank You!

Questions?

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