

# Designing Fun and Sustainable Trails

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Navigating Radical Change – The New Normal



# Session Learning Outcome

Designing sustainable recreational trails that also enhance user experience

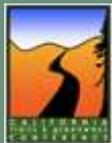
Will these kids like your trails?



# Session Agenda

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- Is it *really* a “trail”?
- What do all good trails do?
- What are typical open space trail issues?
- What can you do to avoid them?
- Some real world examples



# What is and is not a trail?

**Just because something is designated a “trail”...**

**...is this really a desirable “trail experience?”**

**If vehicles can drive on it, we don't consider it a “trail.”**



# Common Open Space Trail Issues



# Common Open Space Trail Issues



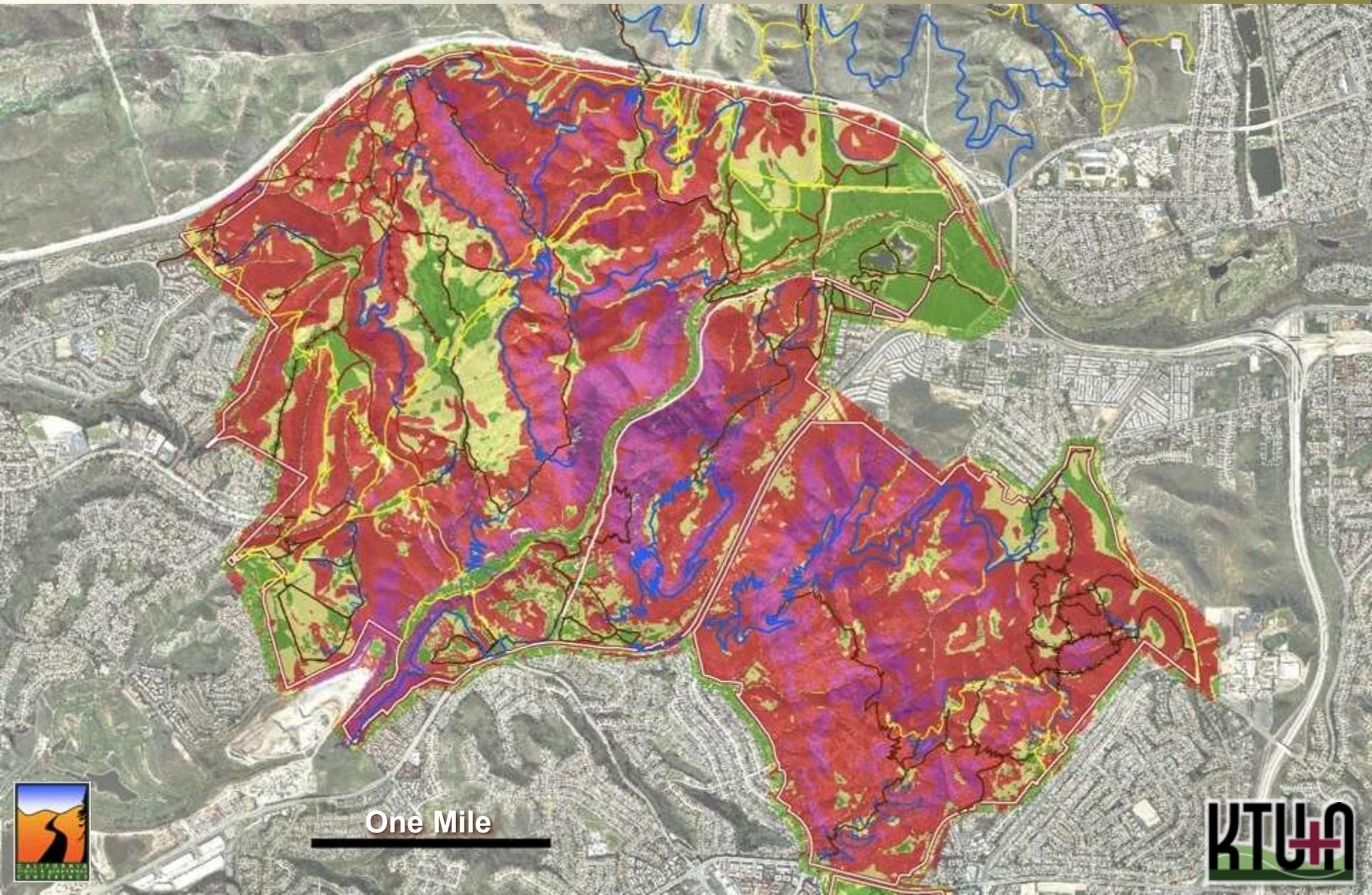
# Common Open Space Trail Issues



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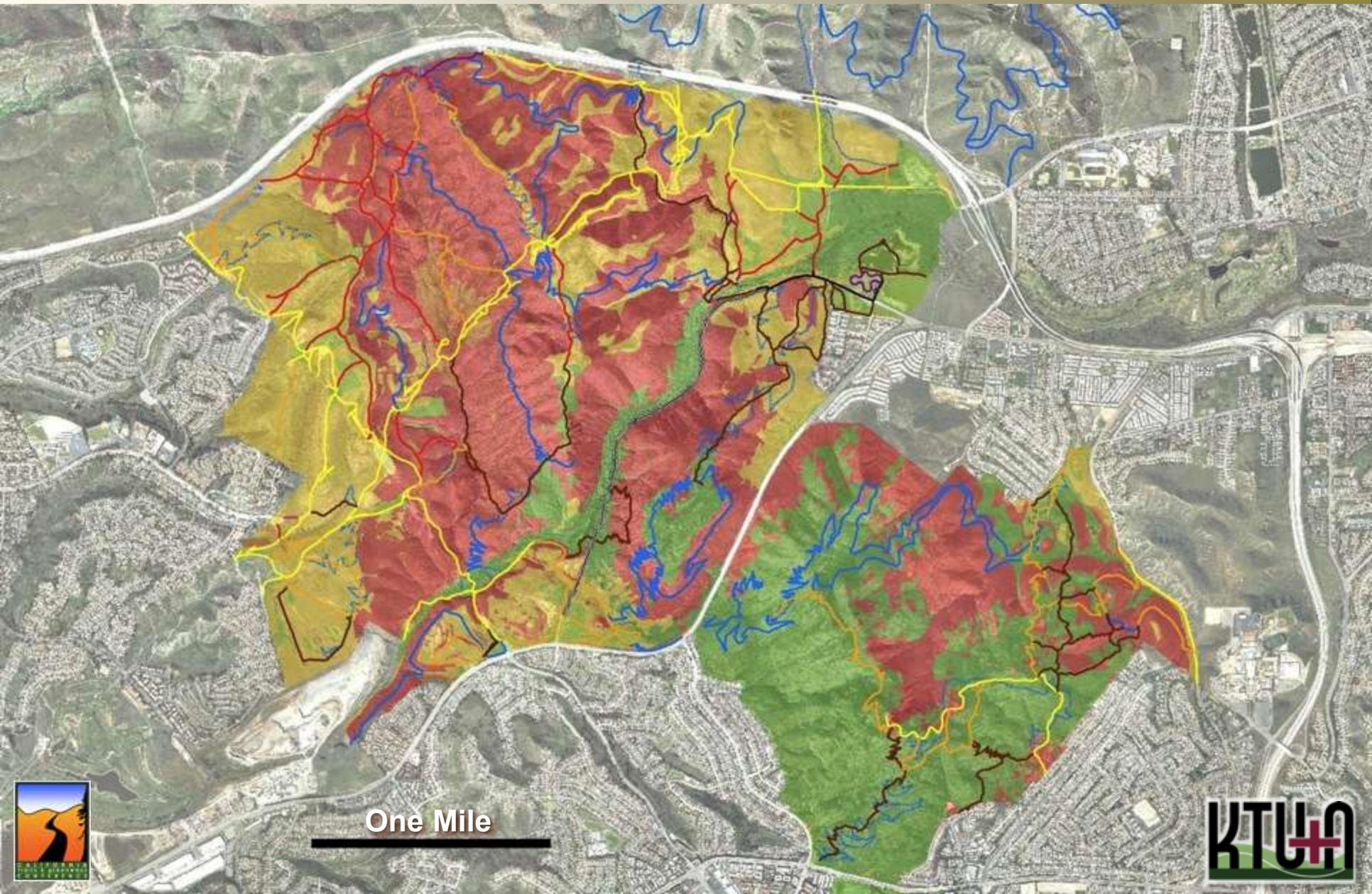


# Planning: Landform and Slopes



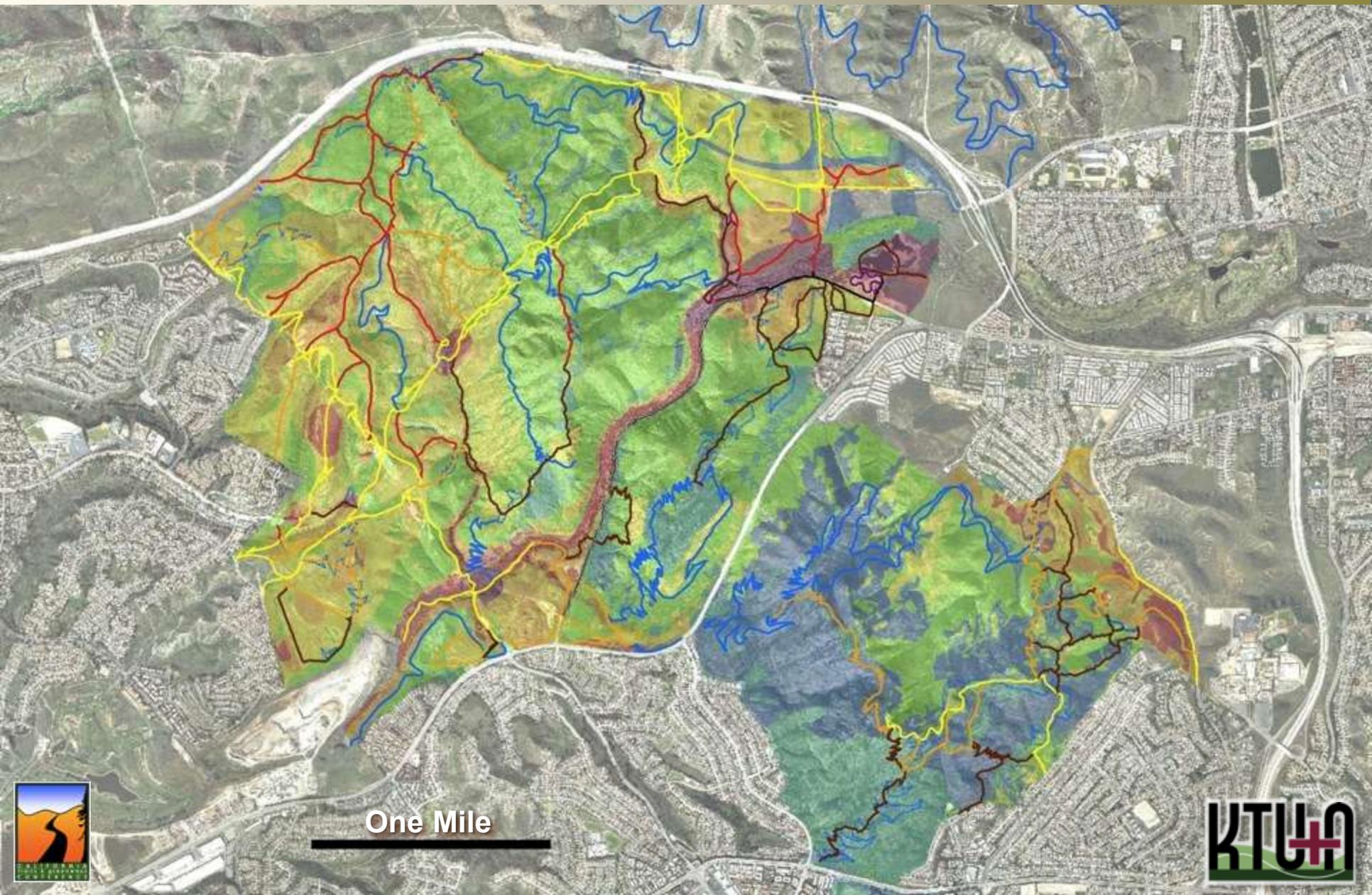
One Mile

# Planning: Erosion Hazard



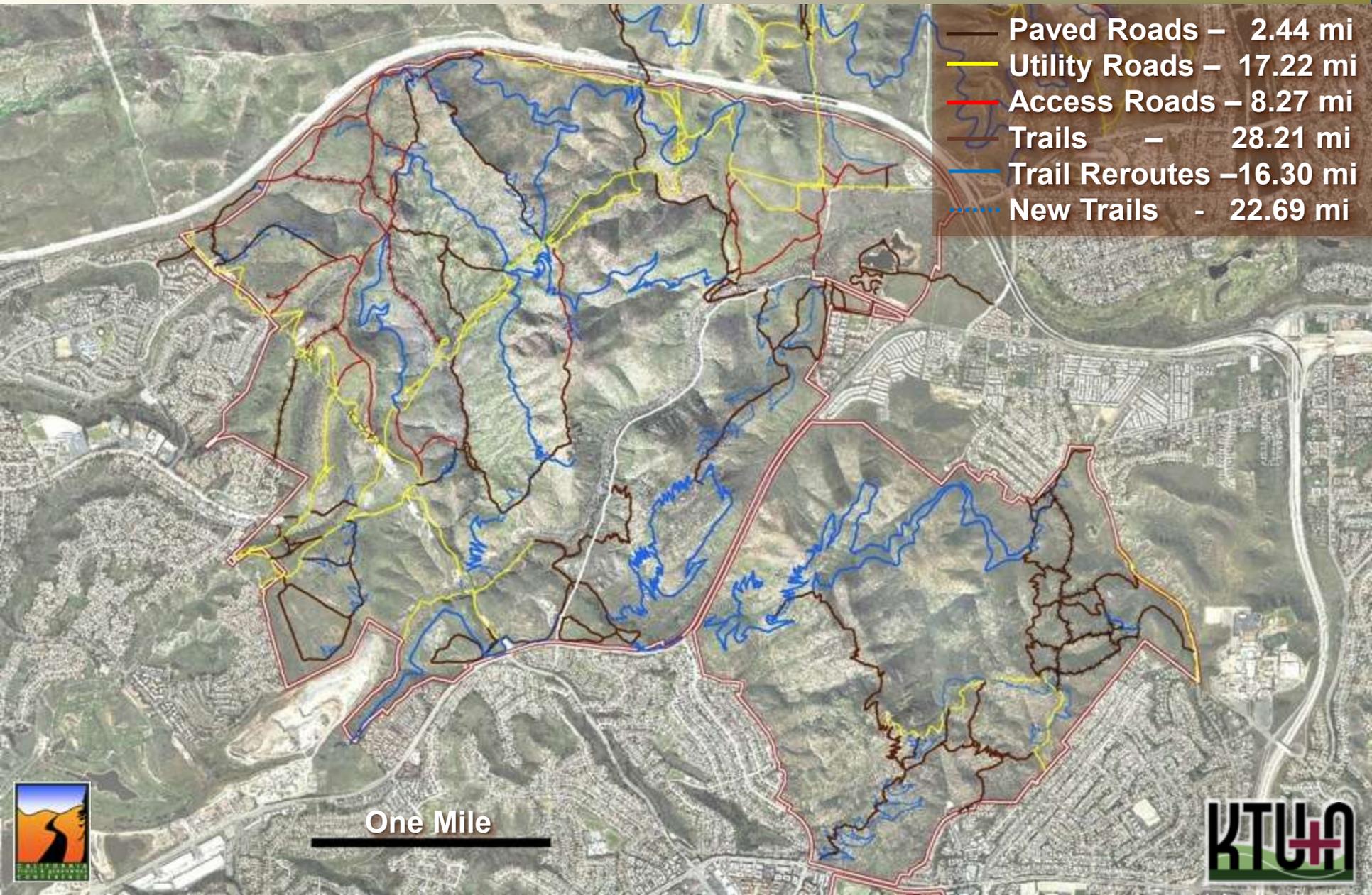
One Mile

# Planning: Constraints Composite



One Mile

# Planning: New Trail Corridors



# Detailed Field Alignment

Planning a corridor is just the beginning. It takes fieldwork to ensure a memorable trail experience.  
(Recent burns make things easier...)



# The basic trail design goals...

Locate trails so that they:

- Can easily shed water.
- Create a trail experience that encourages users to stay on them.

Accomplish these two seemingly simple requirements and you've solved most of your problems.



# Design Solutions: Physical Layout

(Here's the “sustainable” part.)

1. Keep trails on slopes.
2. Avoid “fall line” trails.
3. Obey the “Half Rule.”
4. Maintain 10% grade maximum overall.
5. Maintain a maximum sustainable grade.
6. Adapt trail design to local conditions.



# 1. Keep trails on slopes.



Cuyamaca Rancho State Park



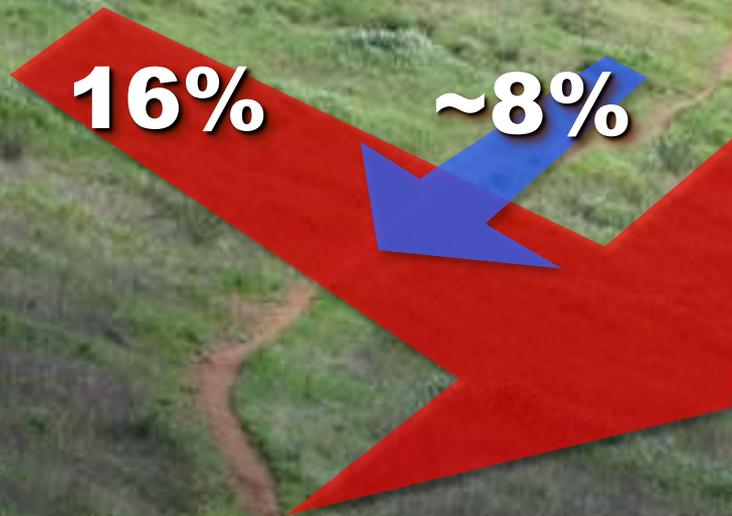
## 2. Avoid the “fall line.”



## 2. Avoid the “fall line.”



# 3. Obey the “Half Rule.”



# 3. Obey the “Half Rule.”



# 4. Maintain an overall 10% grade max.



Sun Valley, ID



# 4. Maintain an overall 10% grade max.



# 5. Maintain a maximum sustainable grade.

- Addresses all soil types
- Allows design flexibility
- Promotes curvature

Rim Trail, Hurricane, UT



# 5. Maintain a maximum sustainable grade.



Romero Trail, Santa Barbara



# 6. Adapt design to local conditions.



50 Year Trail, Tucson, AZ



# 6. Adapt design to local conditions.



Kern County



# 6. Adapt design to local conditions.



White Tank Trails, Goodyear, AZ



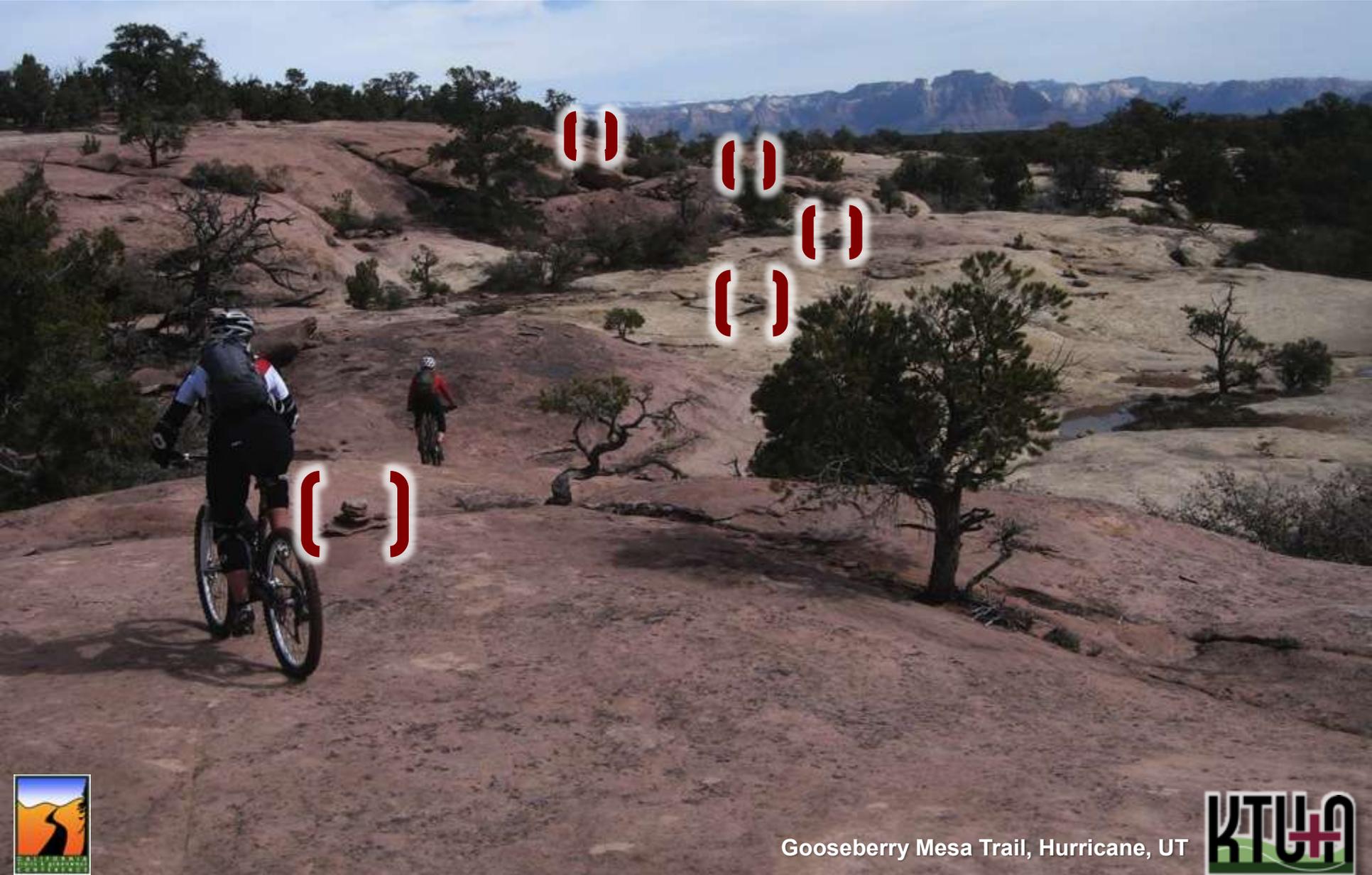
# 6. Adapt design to local conditions.



Maah Daah Hey Trail, Teddy Roosevelt National Grasslands, ND



# 6. Adapt design to local conditions.



# 6. Adapt design to local conditions.



Porcupine Rim Trail, Moab, UT



# Design Solutions: Trail Experience

**(Here's the “fun” part.)**

- 1. Keep it narrow.**
- 2. Provide loops.**
- 3. Avoid straight lines.**
- 4. Take advantage of site features.**
- 5. Take advantage of views.**
- 6. Understand users' abilities and desires.**



# 1. Keep it narrow.



# 1. Keep it narrow.



Park City, Utah



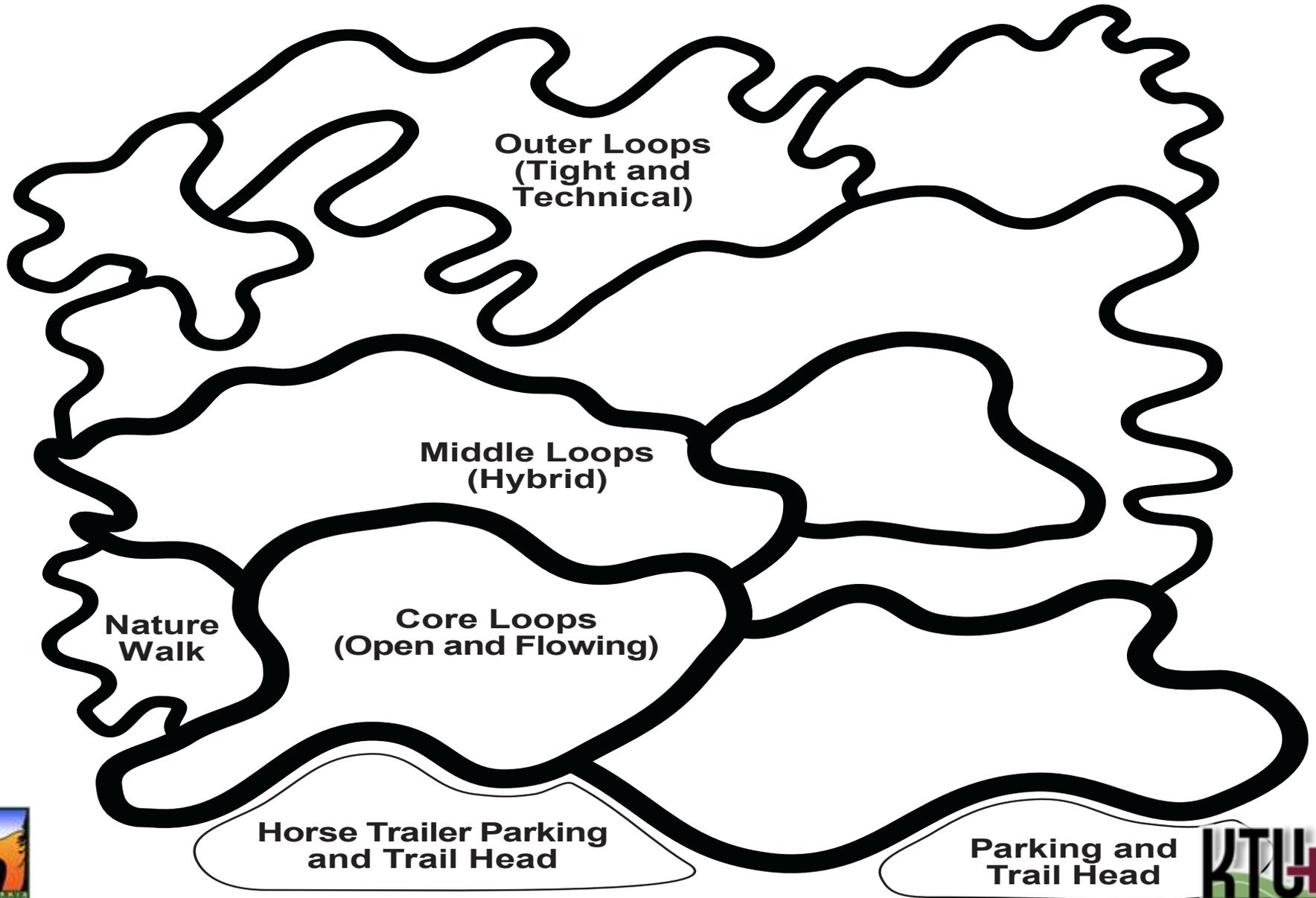
# 1. Keep it narrow.



Bernardo Mountain Trail, Escondido



## 2. Provide loops of increasing length and technicality.



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Bootleg Canyon Open Space, Boulder City, NV



# 3. Avoid straight lines.



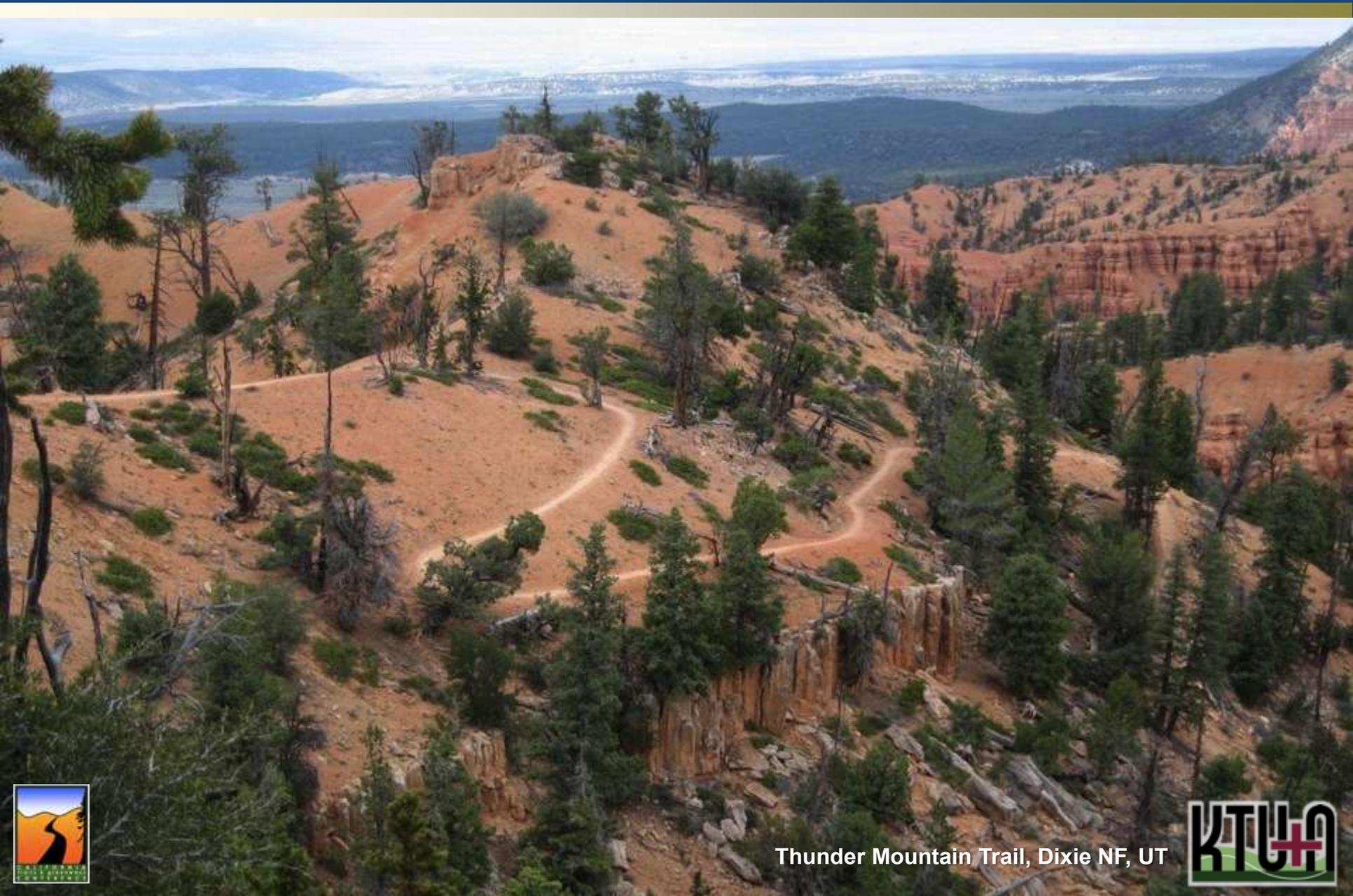
# 3. Avoid straight lines.



Forks Area Trail System, North Augusta, SC



# 3. Avoid straight lines.



Thunder Mountain Trail, Dixie NF, UT



# 3. Avoid straight lines.



Thunder Mountain Trail, Dixie NF, UT



# 3. Avoid straight lines.



# 4. Take advantage of site features.



Hawes Trail, Mesa, AZ



# 4. Take advantage of site features.



Zen Trail, St. George, UT



# 4. Take advantage of site features.



Porcupine Rim Trail, Moab, UT



# 5. Take advantage of views.



Rim Trail, Tahoe





Romero Trail, Santa Barbara



# 6. Understand users abilities and desires.



Noble Canyon Trail, Cleveland NF



## 6. Understand users abilities and desires.



Lyons Peak, Cleveland NF



# 6. Understand users abilities and desires.



Cuyamaca Rancho State Park



## 6. Understand users abilities and desires.



Crestridge Ecological Preserve, Crest



# Real World Examples



Mission Trails Regional Park, San Diego



# Real World Examples



Elfin Forest Recreational Reserve



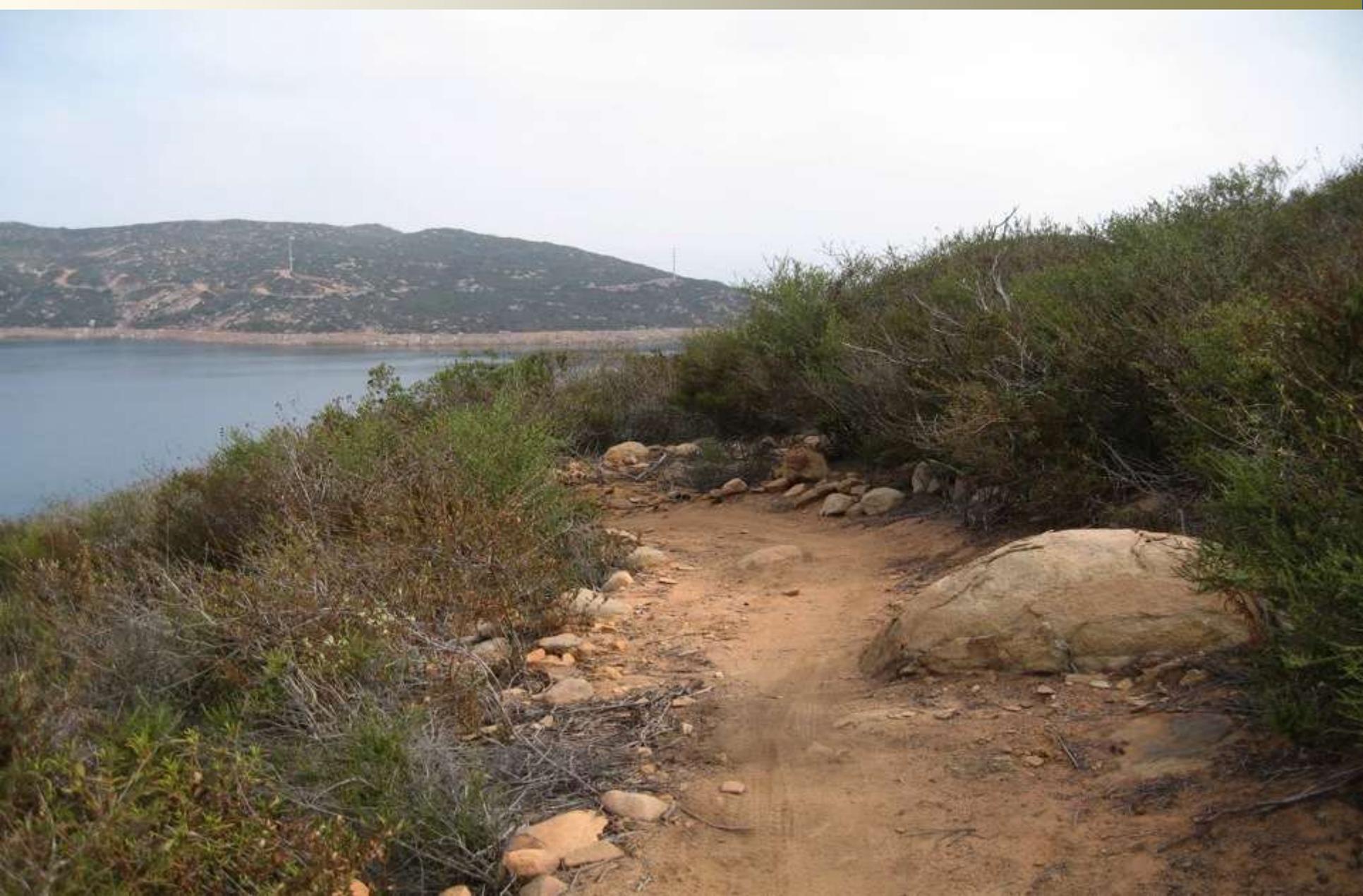
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Elfin Forest Recreational Reserve



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Mission Trails Regional Park, San Diego



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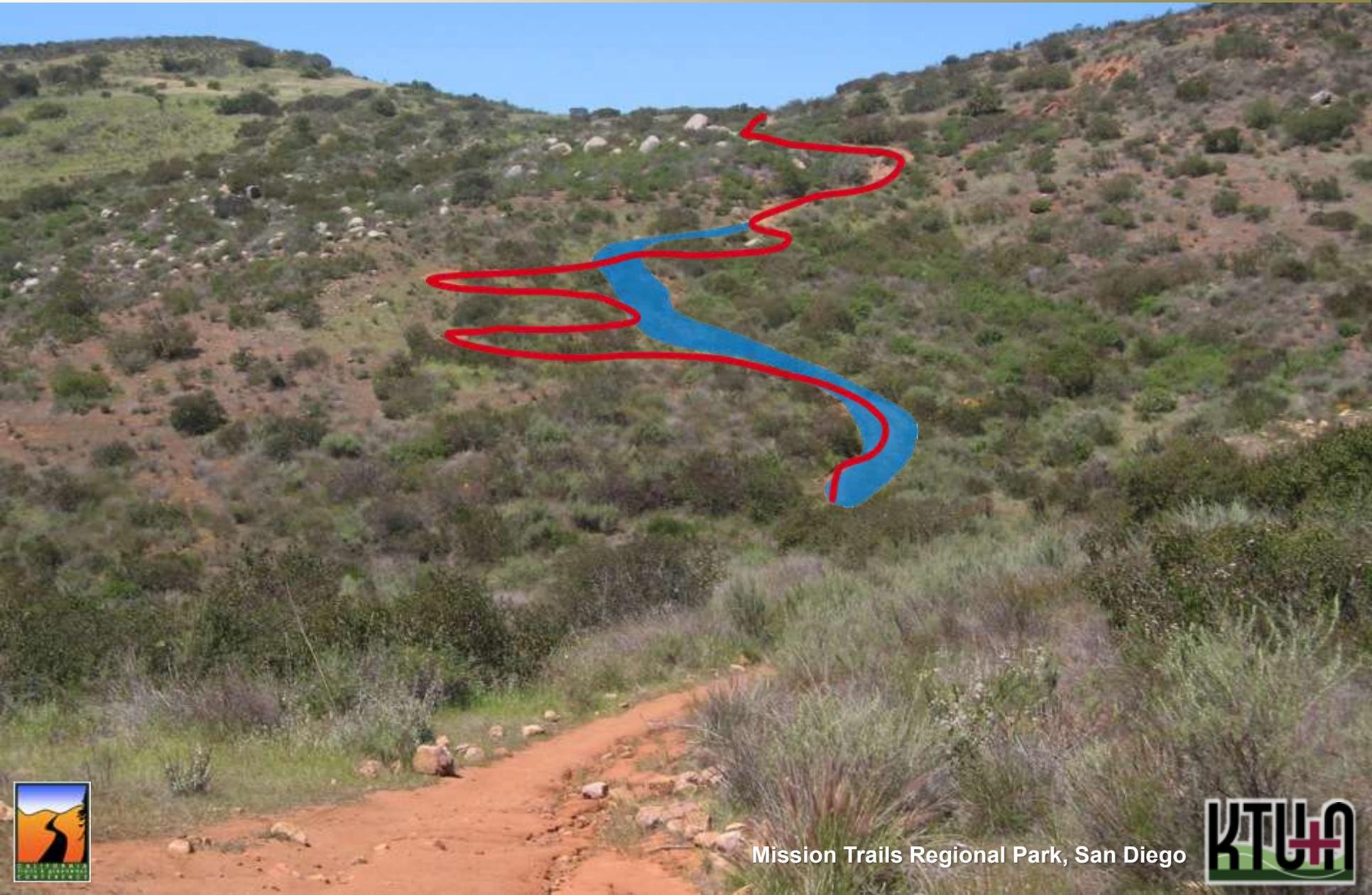
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Mission Trails Regional Park, San Diego



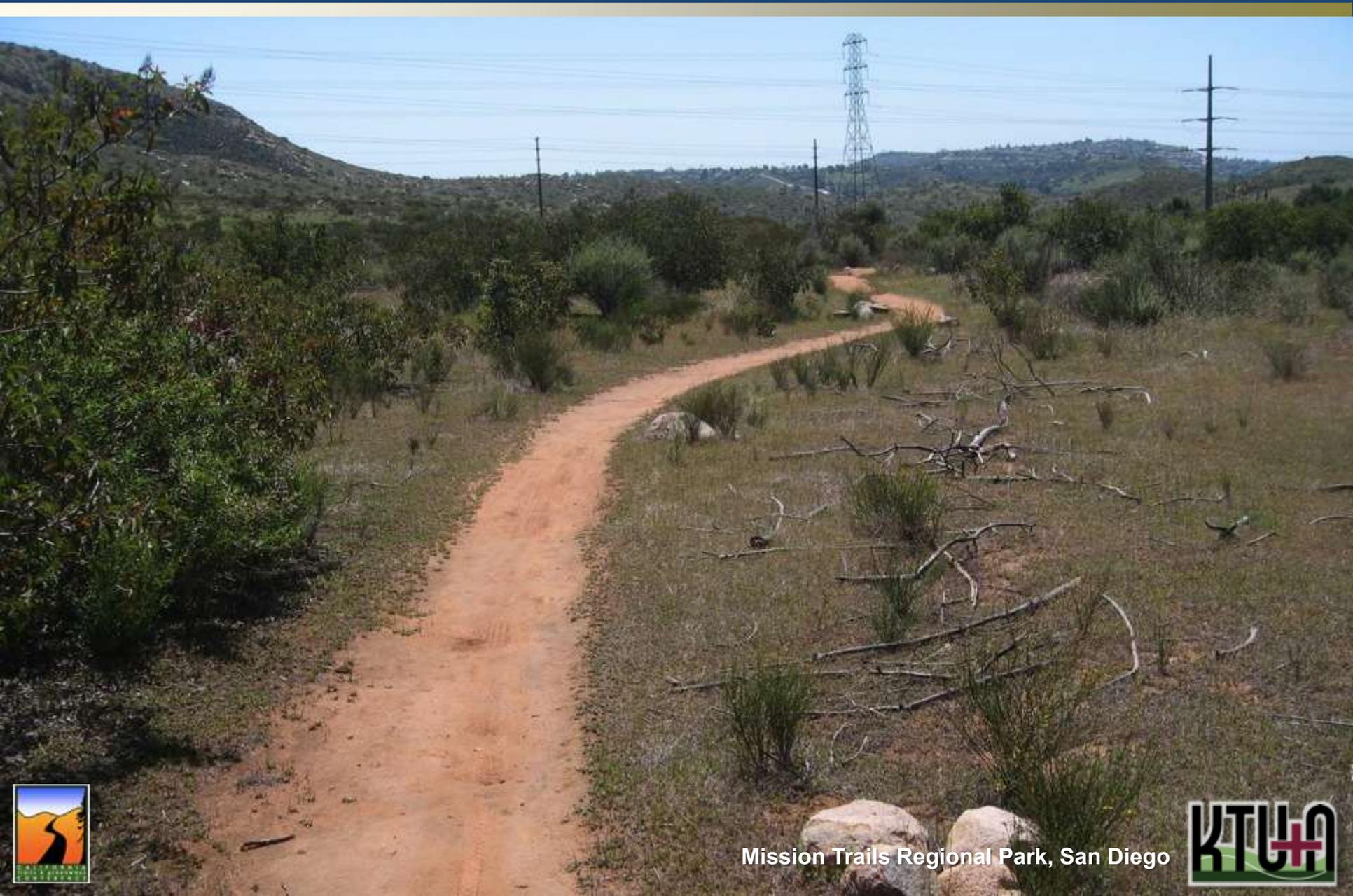
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Crestridge Ecological Preserve, Crest



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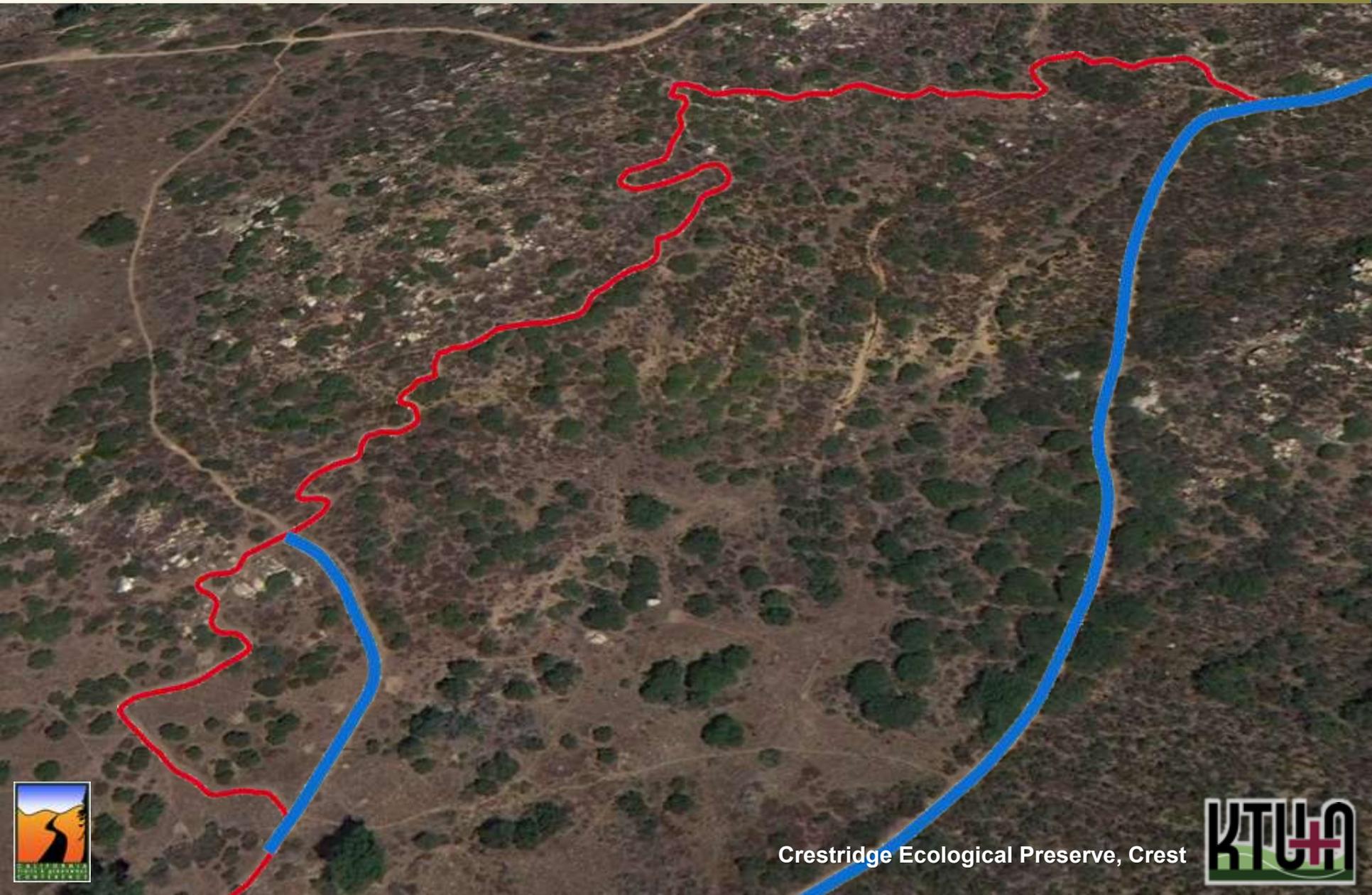
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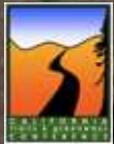
Crestridge Ecological Preserve, Crest



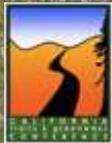
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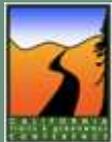


Crestridge Ecological Preserve, Crest



# Well-designed Trails:

- Deliver a positive trail experience
- Control trail users
- Limit management costs
- Limit natural resource/habitat impacts
- Enhance long-term sustainability
- Support volunteer enthusiasm
- Are both sustainable and fun!

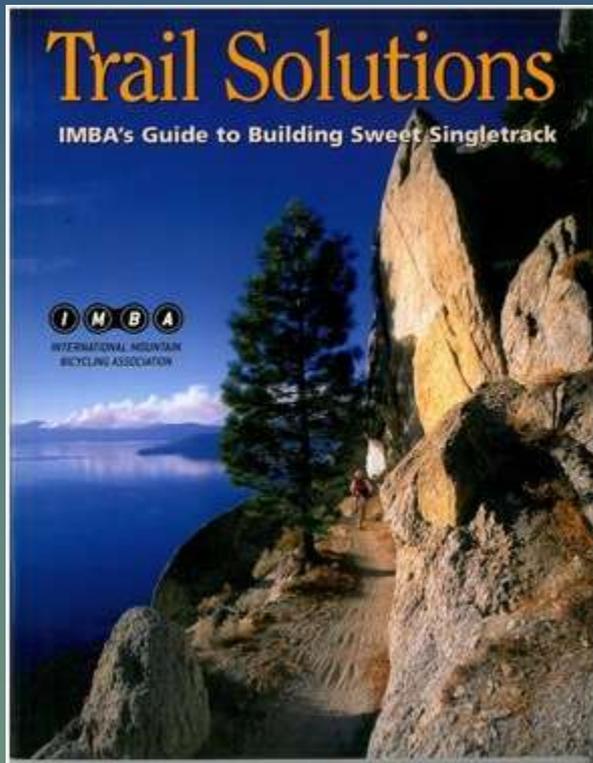


# Resources

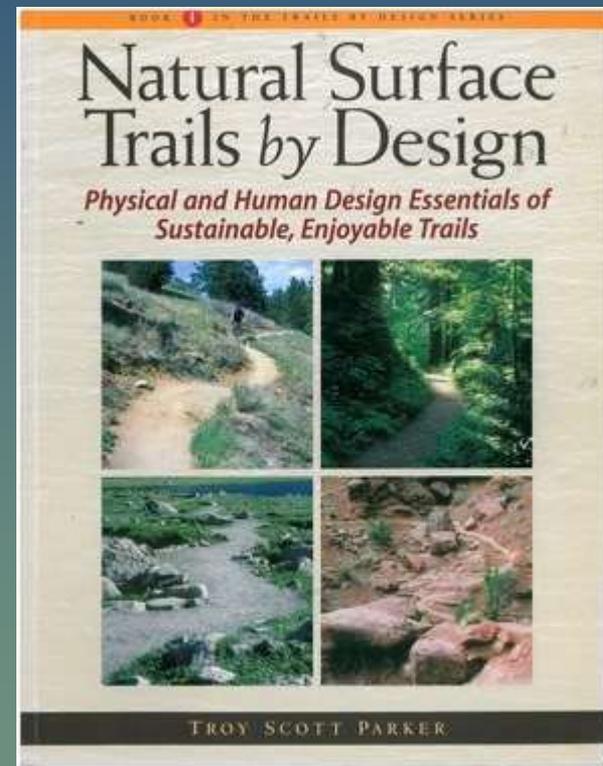
Children and Nature Network: [childrenandnature.org](http://childrenandnature.org)

[imba.com/resources](http://imba.com/resources)

[trailbuilders.org/resources](http://trailbuilders.org/resources)



International Mountain  
Bicycling Association



Troy Scott Parker



*We will be known by the tracks we leave behind.* ~ Dakota proverb

