



Oregon-California Trails Association

# BASICS OF HISTORIC TRAIL PRESERVATION

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PNTS Historic Trails Workshop  
San Antonio, TX  
May 2010



# WHAT ARE WE PRESERVING?

- Trails – The Artifact ←
- Setting – The Context
- Story – The History

“The Importance of Setting,”  
David J. Welch, 2009

[www.octa-trails.org](http://www.octa-trails.org)





# SOUTH PASS, WY





# OUTLINE: TRAIL PRESERVATION

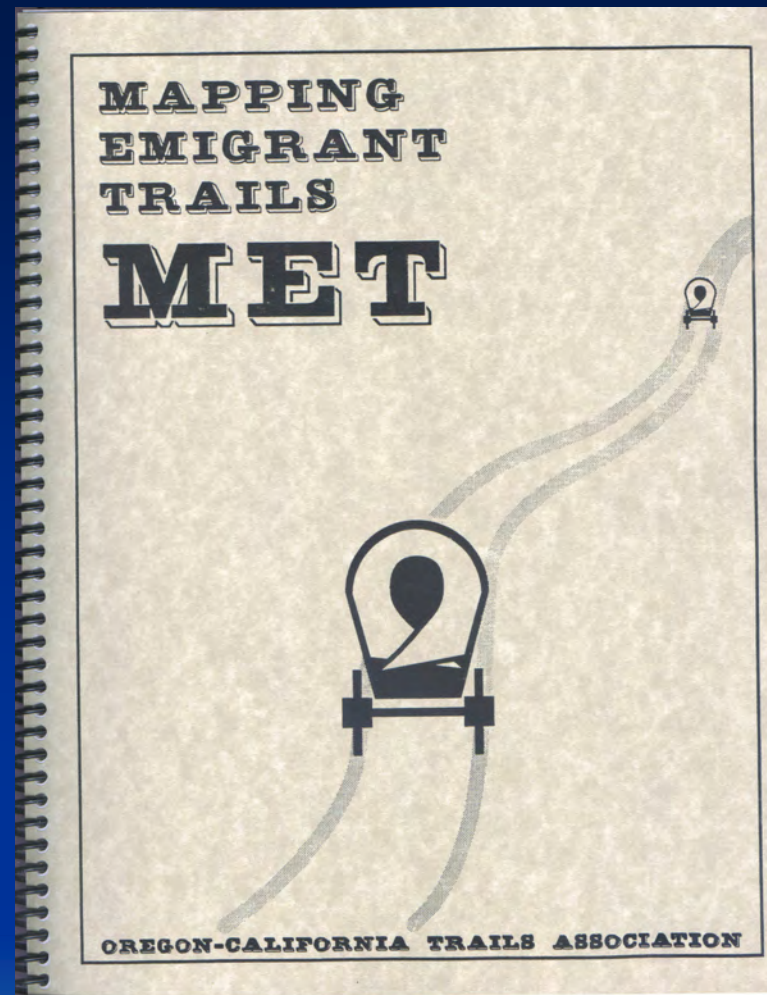
- ✓ Mapping
- ✓ Marking
- ✓ Monitoring



# MAPPING

- Overview
- Terminology
- Cardinal rules
- Evidence and Guidelines
- Techniques and Resources
- GPS and Mapping Software





Don Buck  
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# TRAIL TERMINOLOGY

## **Trace**

General term for any original trail remnant.

## **Depression**

Shallow dip in the surface, often very faint and difficult to see.



## **Swale**

A depression, but of deeper dimensions and with sloping sides.



## **Rut**

Deep depression, without a center mound and having steep sides.





# TRAIL TERMINOLOGY

## **Erosion Feature**

A trace of any sort that has been deepened and altered by subsequent wind and/or water action. Sides and bottom often irregular.



## **Track**

Visible trace caused by compacting of surface or discoloration due to salt evaporation on alkali flats. Little or no depression. Often seen as streaks across an alkali flat.

## **Scarring**

Irregularly wide flat surface, devoid of vegetation, that no longer shows any wagon depressions or swales. Often seen trailing through sagebrush flats in an uneven pattern.

## **Two-track**

Parallel wheel tracks separated by center mound. Typically an unimproved ranch road used by motor vehicles.



## **Improved Road or Secondary Road**

Bladed, graded, crowned, gravelled, oiled, or blacktop roads usually having side berms, curbs or gutters.



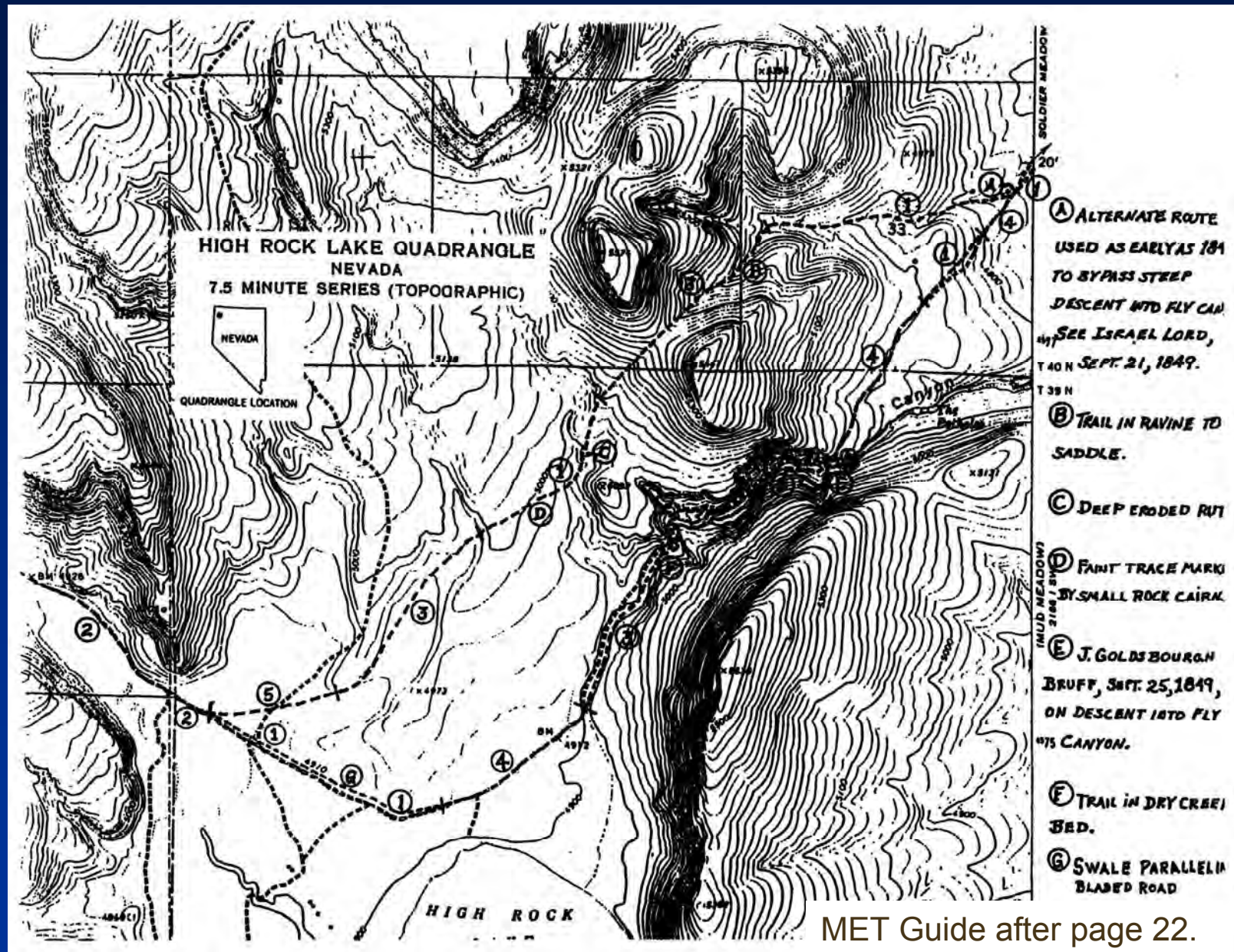




# MET TRAIL CLASSIFICATIONS

- Class 1: Unaltered Trail
- Class 2: Used Trail (two-track)
- Class 3: Verified Trail (but non-existent)
- Class 4: Altered Trail
- Class 5: Approximate Trail

## EXAMPLE PRODUCT: MET MAPPING





## MAPPING AS A PROCESS

- Mapping is an iterative process the goal of which is to maximize the probability that an historic trail has been found.
- Begins with research
  - Old maps
  - Diaries
  - Other research
- Preliminary field studies
  - What is on the ground?
  - How does it relate to the research
  - Preliminary mapping of all possibilities
- Re-evaluation of research
- Detailed mapping and classification



# CARDINAL RULES OF TRAIL VERIFICATION

- Coherence – linear consistency
- Corroboration – supporting documentary evidence
- Collateral – other physical and/or topological evidence
- Correlation – overall agreement of all sources



# RELIABILITY OF EVIDENCE

Generally, the closer in time the evidence is to the event, the more reliable it is.

- Written eyewitness accounts, if specific
- Remaining physical evidence
- General Land Office (GLO) cadastral surveys (earliest)
- Topographic limitations
- Reports and railroad surveys
- Early maps
- Recent documentation





# GUIDELINES FOR LOCATING TRAILS

- Trails often follow ridgelines, not ravines or gullies
- Direct ascent of hills with resultant high erosion
- Multiple crossing of gullies and washes
- Trails avoided rocky terrain
- Spread out (parallel tracks) in alkali areas
- Swales and ruts more indicative of wagon trails than two tracks
- Artifacts may be concentrated at difficult points
- Rocks moved out of the trail path; broken rocks within trail corridor
- Varied vegetation growth
- Rust marks on granite; grooves on other stone
- Tree blazes and rub marks
- OCTA, BLM, NPS and other markers ☺



# OREGON, CALIFORNIA AND MORMON PIONEER NATIONAL HISTORIC TRAILS







# TWO-TRACK IN WYOMING



Photo by Randy Wagner



# SWALE - SONORAN DESERT, ARIZONA



Anza, Mormon Battalion, Southern Emigrant Route to California





## Grooves



**Note: Other evidence is consistence with these grooves being from wagon wheels.**





**Rust**





**Cleared Path**

**Cattle Trail**





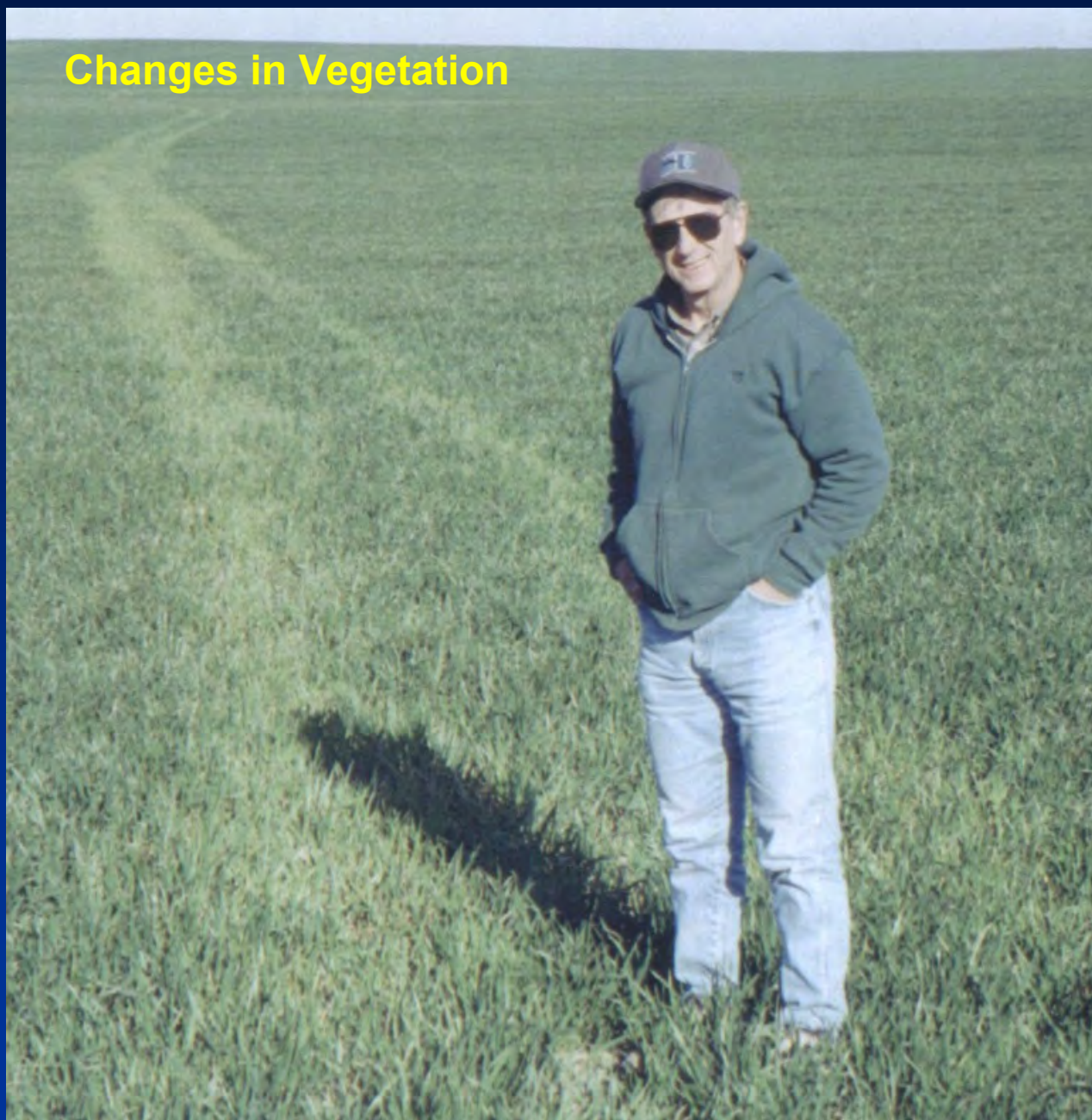


**Gully Crossing**





## Changes in Vegetation



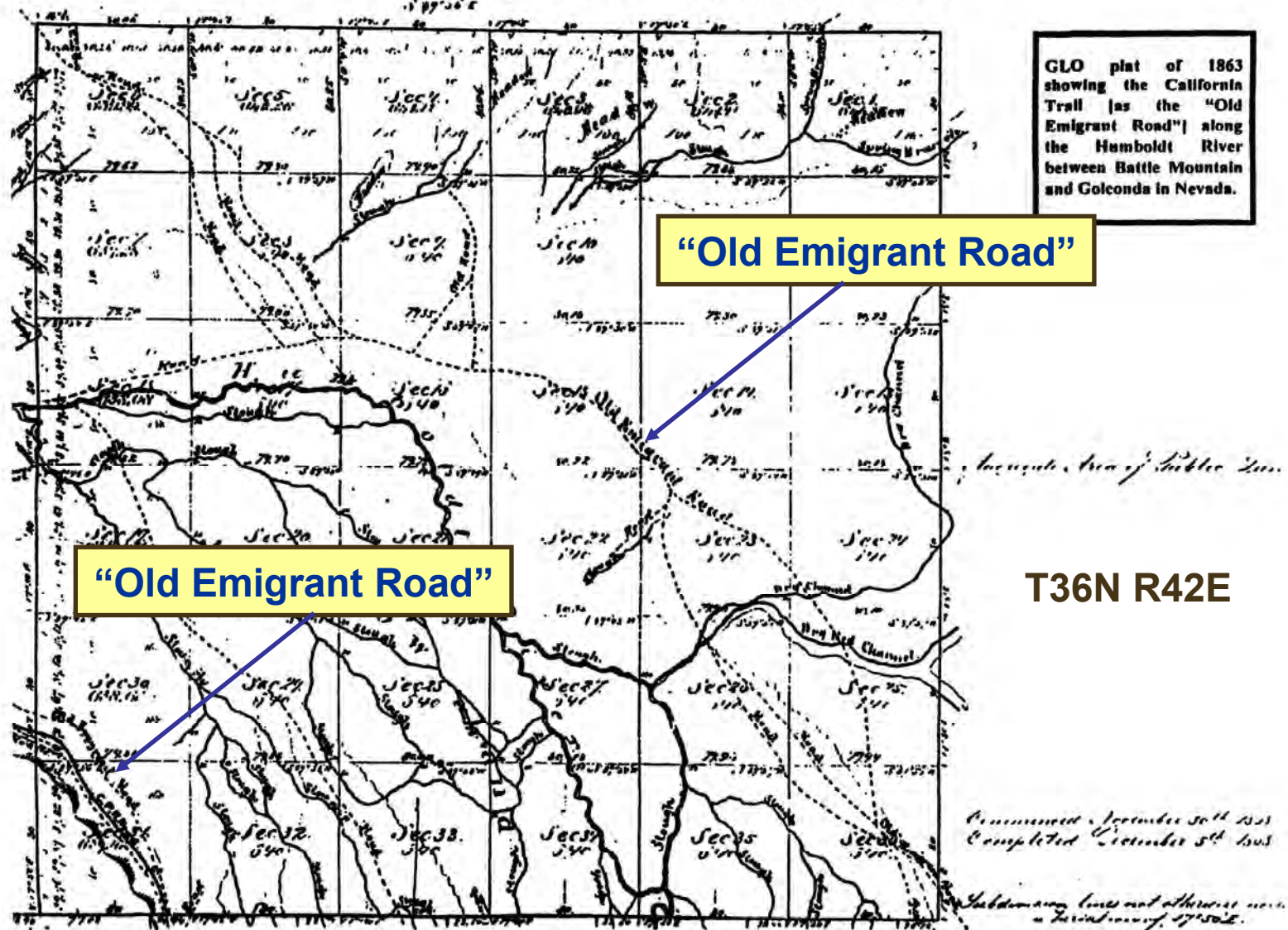


# MAPPING RESOURCES

- General Land Office (GLO) maps
- USGS maps
- Trail documents
- Aerial and satellite photographs
- Global Positioning System (GPS)
- Mapping software

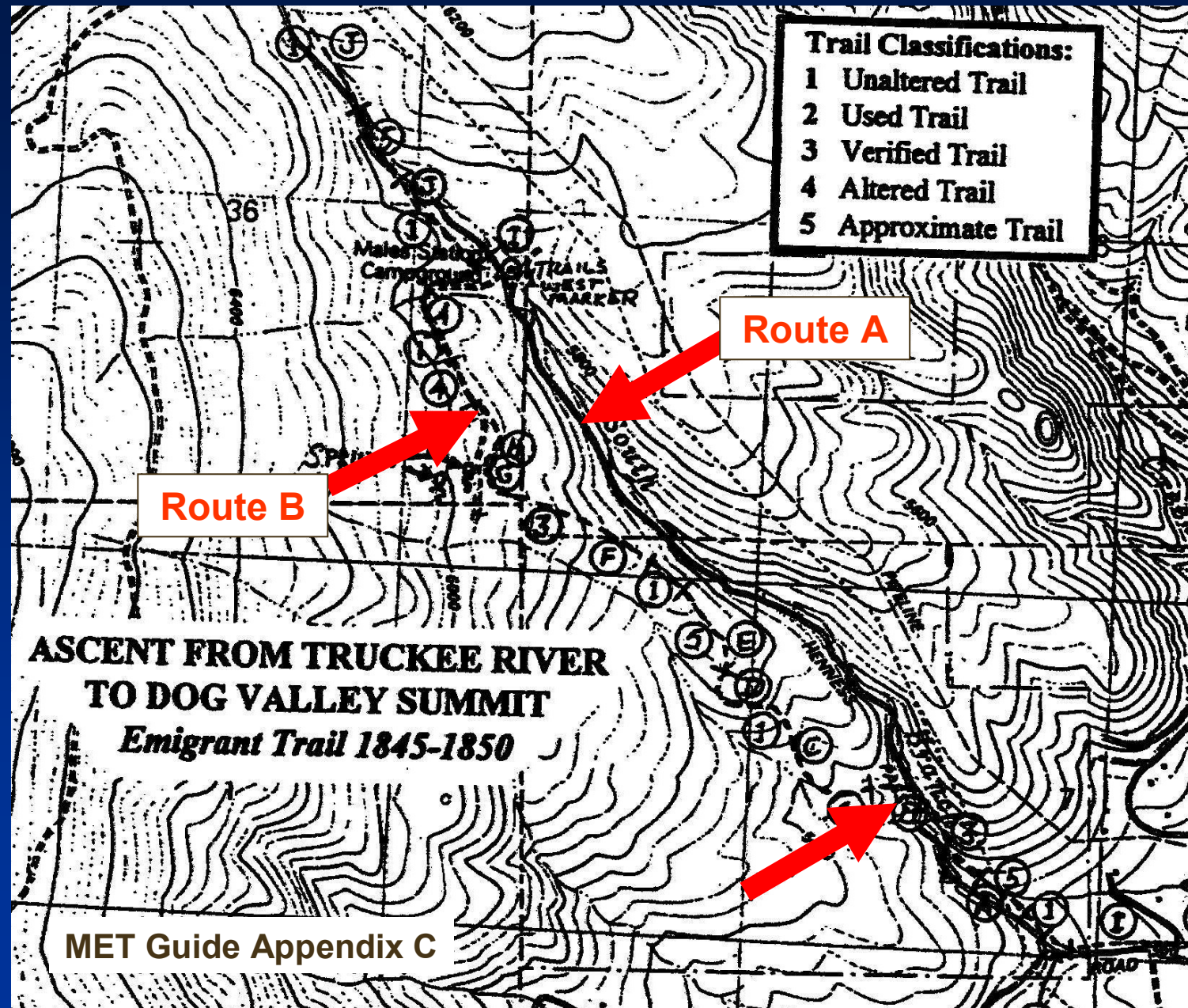


Township N°36 North. Range N°42 East. Mount Diablo Meridian.





## USE OF TRAIL DOCUMENTS – DOG VALLEY EXAMPLE





# DOG VALLEY TRAIL DOCUMENTS

(See handout and MET guide for complete discussion)

## *Example 6 - Wakeman Bryarly: Aug. 20, 1849*

We started at daybreak & crossed the river [*Truckee River*]. The road turned immediately to the right in a north direction & continued for one mile, when it went in a northwest, ascending a spur of mountain, one of the chain of the California mountains. We ascended this [*the ridge immediately on the west side of the South Branch canyon*], it being in some places very steep, & then again coming upon a little table of land upon which had been good grass, & upon one with a cool but small spring. After rolling there 5 miles, we opened upon a beautiful little valley with a very steep hill to descend to it [*Dog Valley*].

DJW: Consistent with use of Route B. The table land and spring were located in field work.



# GPS AND MAPPING SOFTWARE

- For our purposes, consumer-grade systems are adequate (\$150 to \$300)
- Record tracks and waypoints for later plotting.
- Download to computer for processing.
- Plot data and add annotations in mapping software that includes USGS topographic maps.
  - Terrain navigator Pro (MyTopo, formerly MapTech)





Terrain Navigator Pro - Washington - Mapping Manual - [LACEY 47122-A7-TF-024]

File View Find Tools Layers GPS Adjacent Window Help

10 05 11 263 E 52 17 312 N NAD27 116 ft  
1:24,000 T 1:2 47.1111895° N 122.8515467° W NAD27





# MAPPING WITH GPS AND TERRAIN NAVIGATOR PRO



Main Menu

**Mark Waypoint**

001

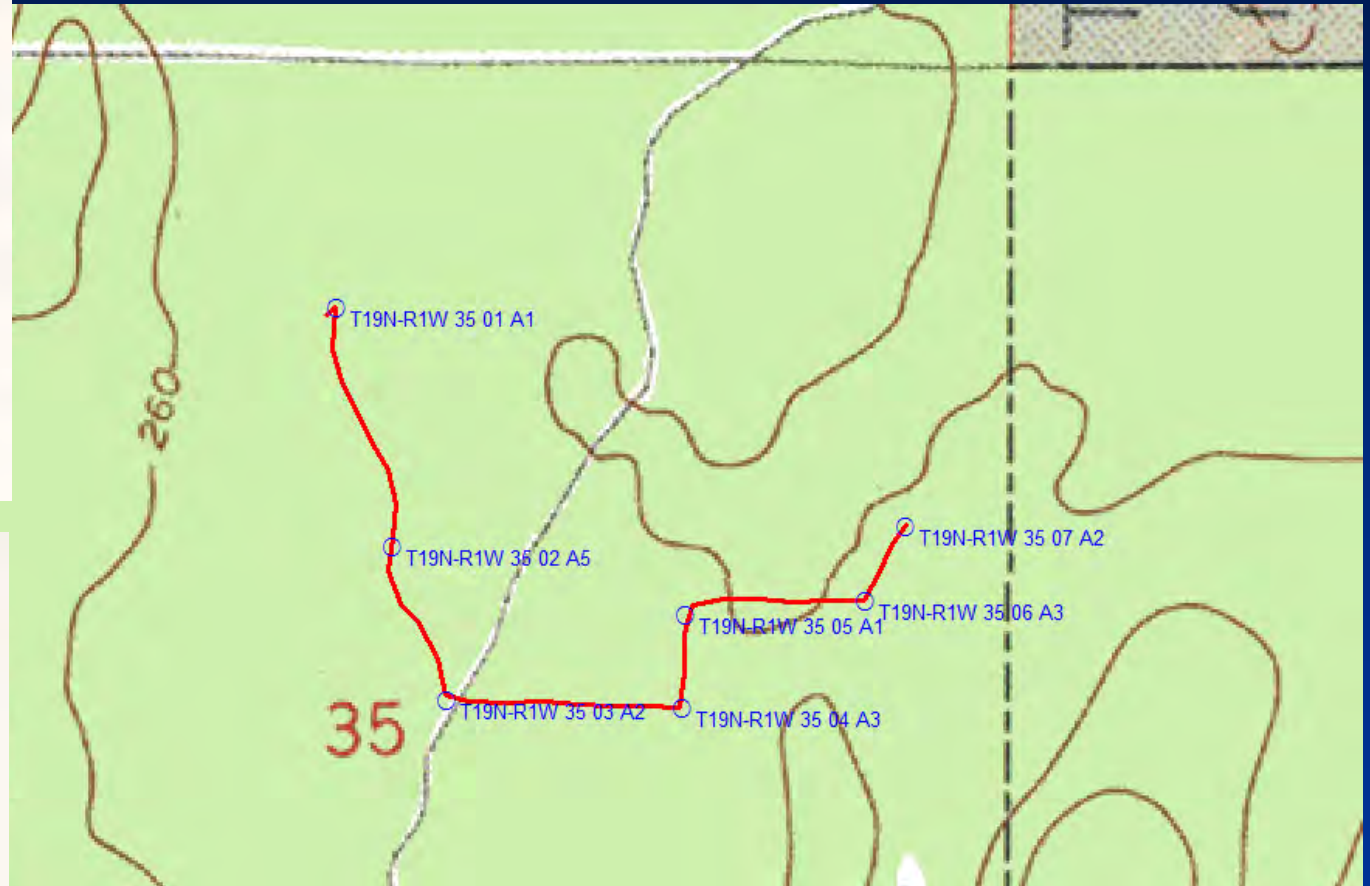
Note  
24-OCT-05 11:25:52AM

Location  
N 38°51.404'  
W 094°47.938'

Elevation  
1004'

From Current Location  
W 4'

Avg Map OK





# MAPPING SUMMARY

- When mapping, we
  - Are attempting to maximize the probability our interpretation is correct.
  - Need to apply an iterative process open to different interpretations.
  - Need to begin with historical research.
  - Need to be aware of the subjective nature of the process.



# TRAIL MARKING





## Trail Markers

Carsonite:	Carsonite International White or Brown    CRM3066 5' 6" long    3.75" wide    2.5 pounds About \$30.00 each with decals
Steel Rail:	6' long with 18" horizontal top rail 2.5" x 12" plate bolted to fishing Engraved diary quote for location
Novalloy:	Interpretive sign Aluminum; gold lettering on black panel
Concrete:	BLM favorite 6' long    8" at bottom tapered to 4" at top
Decals:	BLM, USFS, USFWS or NPS labels Metal or plastic on posts or trees Trail name decal



# Beckwourth Trail Carsonite







# Driving a Carsonite Marker







# Steel Rail Marker





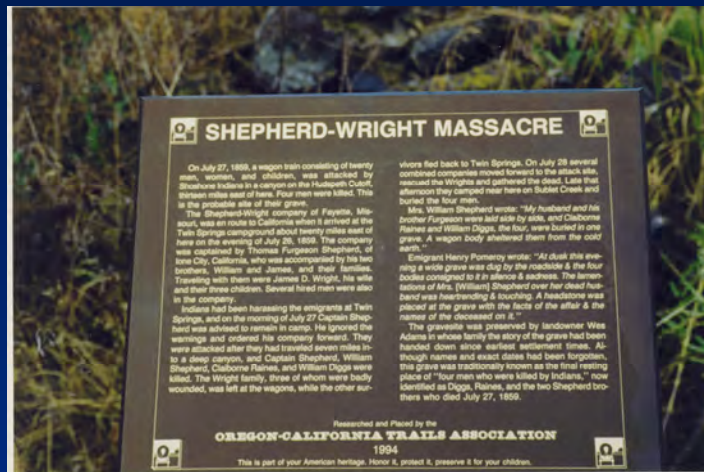


# Steel Rail Marker





# Novalloy Interpretive Panel



The Shepard-Wright Massacre Grave Site.







# Posts (Wyoming)





## Marking: The Process

- Initial planning
- Research
- Permits
- Final approval
- Installation

See “OCTA Trail Marking Policy” for details and forms at  
[WWW.OCTA-TRAILS.ORG](http://WWW.OCTA-TRAILS.ORG)



# TRAIL MONITORING ACTIVITIES

- Act as liaison between OCTA and land managers/owners/developers
- Organize and oversee OCTA activities along a selected trail or trail segment
- Increase public awareness of the trail and enlist public support for its protection



# LAWS APPLY TO HISTORIC TRAILS

- National Historic Preservation Act (1966, as amended), Section 106  
OCTA consults as an interested party, having specific knowledge and interest in trails
- National Environmental Policy Act (1979)  
OCTA consults as public organization, and is given equal consideration with all other public concerns.





# WHAT IS SECTION 106?

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation reasonable opportunity to comment.

Objective: Avoid, minimize or mitigate adverse effect

Applies to federal undertakings on both public and private lands.

(36CFR Part 800, January 11, 2001)

# WHAT IS AN UNDERTAKING?

An undertaking is a project, activity, or program that involves federal funding, permitting, license, approval, or is subject to state or local regulation administered pursuant to a delegation or approval by a federal agency

(36CFR Part 800.16(y))





# COMMON PITFALLS FOR TRAIL LIAISONS

- Initiate Section 106 process
- Identify historic properties
- Assess effects
- Resolve adverse effects
- **Never consulted**
- **Trails are unidentified, misidentified, incorrectly evaluated**
- **“No effect” decision made incorrectly**
- **Mitigation inadequate**



# FIELD MONITORING ACTIVITIES

- Mapping trails
- Trail Maintenance
- Observe changes
- Photo-monitoring
- Identify contacts





# MONITORING ORGANIZATION

- Trail Stewards – requires least amount of time/commitment from chapter members.
- Trail Monitors – requires annual or bi-annual trail visit, photo-monitoring and/or mapping and/or consultation at some level.
- Trail “Boss” or Manager – level of time/commitment varies depending on length and existing management conditions of selected trail segments.

# SUMMARY

- Mapping
  - OCTA MET Manual
  - Historic and current maps and aerials
  - Primary source documents
- Marking
  - Variety of posts and signs available
  - Consistency and brevity
- Monitoring
  - Supported by volunteers
  - NEPA, NHPA/Section 106





# OCTA CONTACT INFORMATION

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# *Happy Trails!*

