



# Tracker II



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# OBJECTIVES

- Learn the skills necessary to be a tracking team leader
- Understand the principals of a Route and Location Search
- Become familiar with artificial light sources
- Become familiar with vehicle tracks
- Learn the basics of Indexing (aging) tracks
- Recap the basics of a Line Search

# Mental Preparedness

## Potential Outcomes

The outcome of the search and your tracking efforts may be one of the following:

- Subject is located alive and uninjured
- Subject is located alive and injured
- Subject is located deceased, potentially by criminal means
- Subject is not located

You must be mentally prepared for any of these potential outcomes.

# Mental Preparedness

- Who is the subject of the search? Is it someone close in age to a relative, or one of your children?
- Are you mentally prepared and fully vested in the task?
- If the subject of the search is going to be a difficulty for you there are other ways to help
- You will never be asked to do something for which you are not trained or comfortable doing
- It's possible to internalize the subject of a search
- Resources are available for traumatic events

# A Tracker II should have the skills to be a Team Leader

- The Team Leader is responsible for:
  - ✓ The safety of his team
  - ✓ Making decisions as to assigned mission-with input from his team
  - ✓ Recording important information to be used in filling out ICS Form 214
  - ✓ Ensuring the team works well together
  - ✓ Being skilled in navigation, radio communications, search tactics and tracking

# TRACKER III REVIEW

- A Tracker
  - is a clue finder
  - determines direction of travel
  - reduces area to be searched
  - identifies possible scenarios
- Critical factors of tracking include
  - light direction / light source
  - where to look for tracks
  - directional indicators
  - gathering information from tracks
  - tracking tools
  - track preservation

# TRACK CHARACTERISTICS

Contrast

Shape

Texture





# TYPES OF TRACKS

1. Partial track- the entire footprint isn't visible. May only see the side, front, back or distinctive pattern of the track.



## 2. Compression track



The weight of the subject has pushed the rock down into soft dirt

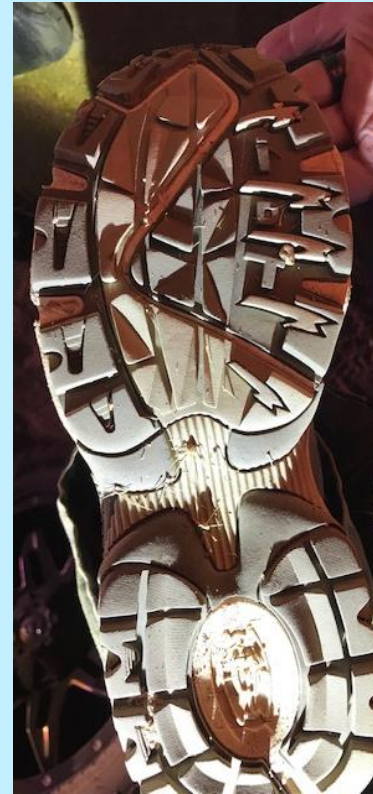
### 3. Tracks in vegetation

Note  
matted  
down  
vegetation

Note color  
change



# POTENTIAL TREAD PATTERNS



# Name examples of different types of clues

## •Visual clues

- Tracks
- Discarded items
- Broken  
vegetation
- Game flushed at  
a distance not  
associated with a  
searcher
- Flash of a mirror
- Smoke

## •Non-visual

- Sounds
- Gun shots
- Dogs barking
- Whistle
- Smells
- Decaying  
body
- Campfire
- Perfume
- Human waste

# TRACKER II: Teaching Objectives

- Learn how tracks and clues tell a story
- Understand the different types of light and light angles - how this plays a role in locating tracks
- Understand the fundamentals in a Route and Location Search
- Become aware of vehicle tracking
- Learn how to secure a scene, identify the subject's track and a direction of travel despite the level of contamination
- Become aware of aging (indexing) tracks and clues
- Learn how to lead a Line Search

# HOW CLUES TELL A STORY

- By reading the tracks and clues (sign), the tracker is better able to follow a subject and anticipate the subject's movements.
  - Example - Track strides or disturbances near the track, and tracks leading out with a drag mark, suggest the victim may have fallen or is injured.
  - Example - Large spaces between tracks in the stride may indicate the subject was running.
- Over time, tracks help to formulate a picture of the subject's personality, physical condition and mental state.

# LIGHT TYPES AND ANGLES

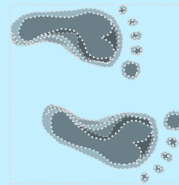
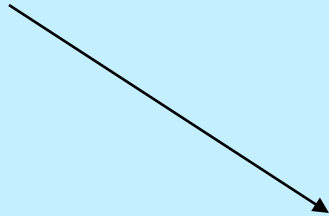
- There are two types of lighting - natural and artificial.
- The sun can be your friend or enemy depending on what time of the day it is.
- Sometimes the surface of the terrain may reflect light, leading to eye strain and slowing the tracker's effectiveness.

What is the worst time of day to track?

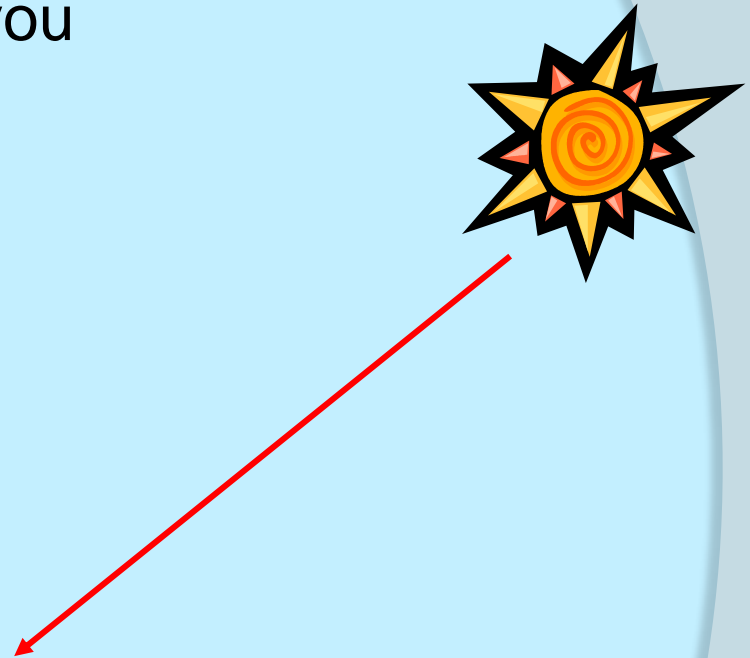




When the sun is directly overhead.



You want the track between you and the light source.



The sunlight produces shadows.

# Example of shadows created with the track between you and the sun



# ARTIFICIAL LIGHT

- Flash lights and lanterns are two examples of artificial light
- Artificial lights can be of low, medium or high intensity - select the type that best helps you see the tracks
- There's different types of artificial light, such as LED, halogen, incandescent, etc. Warm vs. cool lighting- Kelvin scale.
- Terrain may play a part in determining which artificial light is best
- Example - a particular surface may be seen best with a low intensity halogen light rather than a high intensity Mag-Lite

When using artificial light, you control the angle of the light.

Hold the light close to the ground to avoid “washing out” the track.

Light used in picture was Mag-Lite at low angle.



Low light,  
Multi-LED  
bulb  
flashlight.  
Low angle



Low light  
Mag-Light  
Focused  
Beam

Low angle



LED flashlight  
low angle





Many searches begin by looking for the subject's vehicle. What track are we looking for?

Check the Subject Profile sheet for clues.

Description of vehicle?

- Highway sedan
- SUV
- Jeep
- ATV
- Motorcycle

Description of driver?

- Experienced or inexperienced driver
- Familiar/unfamiliar with area
- Hunter
- Off-road enthusiast
- Delivery truck driver

Moderately aggressive tread – all-terrain tires commonly found on light trucks and jeeps.



## Aggressive tread – M/T tires



ATV tires may have directional tread.



Here are some vehicle tracks but are they coming or going??



# DIRECTIONAL INDICATORS

- Never rely on a single indicator - look for pattern to tell direction - a minimum of three indicators.

- Displaced rocks

  - Rocks in track are moved away from direction of travel

- Wave patterns in sand

  - Wheel hop causes wave pattern in sand, forming a ramp side and a steep side

- Stream crossings

  - Be careful with puddles - they are not good indicators because water sloshes both ways

  - Running water does not allow a back and forth sloshing, so tracks across running water can be used as an indicator

Displaced rocks are good indicators if the vehicle is moving forward and not applying brakes



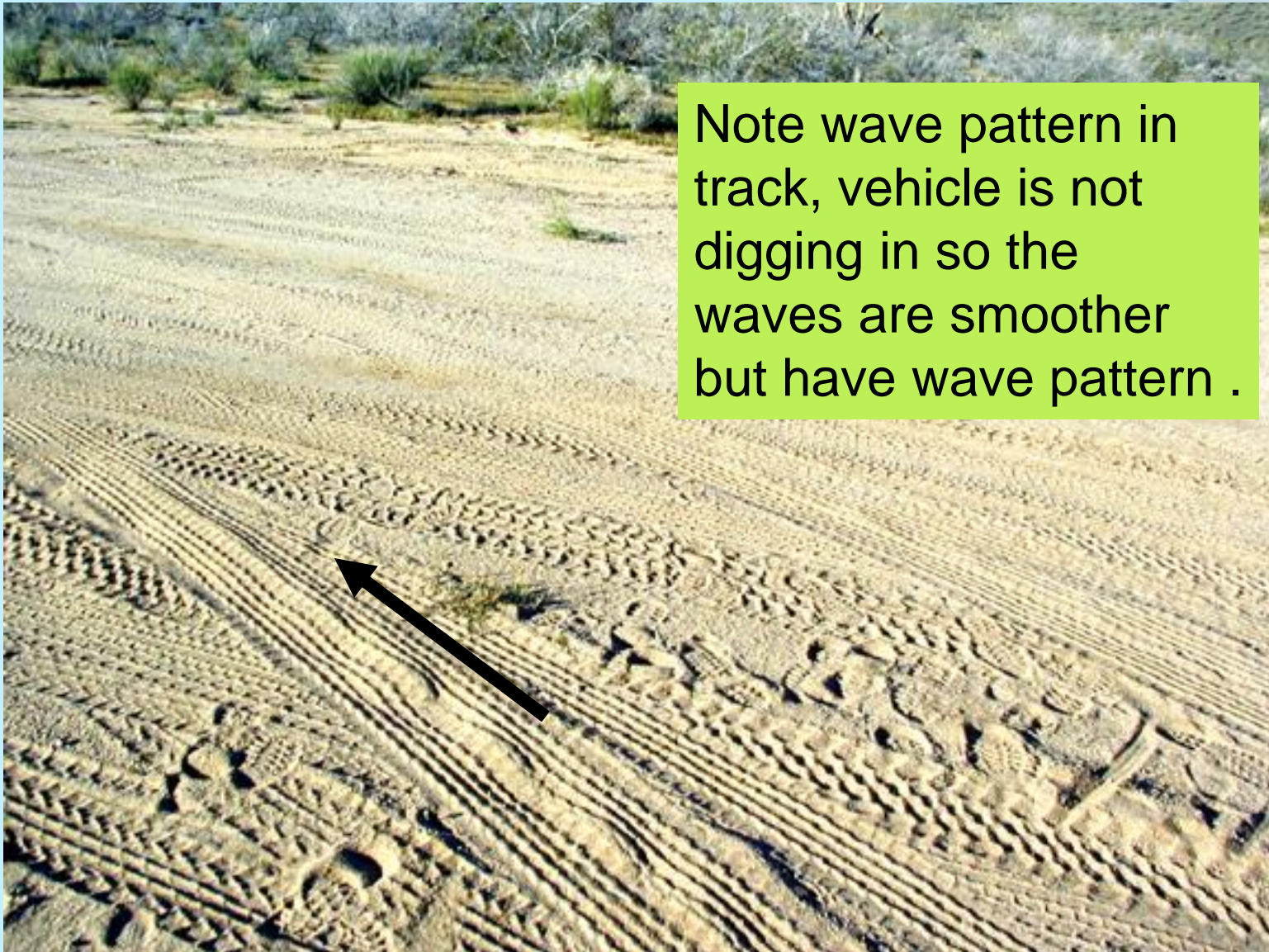
Wave pattern in sand, ramp side to left, steep side to right covering tracks, vehicle moving to:





Note wave pattern. Which way was he going?





Note wave pattern in track, vehicle is not digging in so the waves are smoother but have wave pattern .

Vehicle crossing small ditch will push dirt backward



Gully crossing road is a good place to find directional indicators



# What direction was the vehicle traveling?



Many ATV tires are directional

Track in soft wet sand, which way was the vehicle going and why?

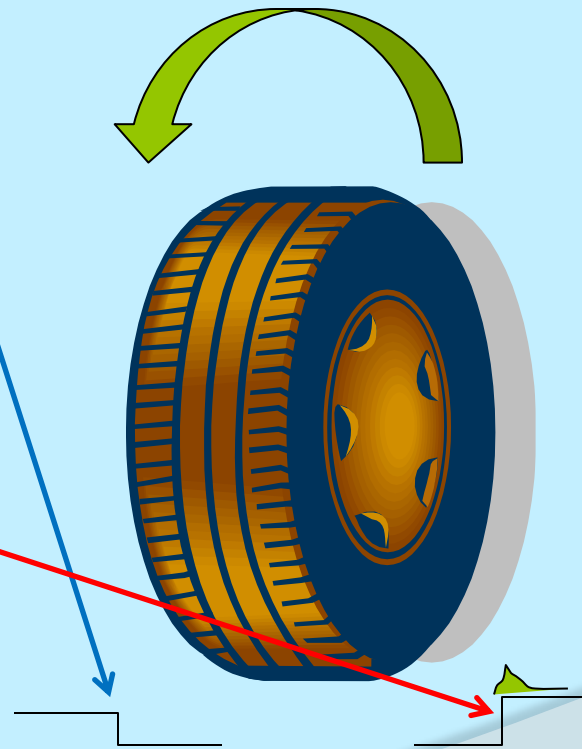


What is the  
travel direction-  
toward the top  
or bottom?



As a tire goes through mud,  
1. It makes a clear/sharp  
track in front as the tread  
first goes into the mud

2. Then pushes up  
on the back side  
of the track, lip is  
raised.

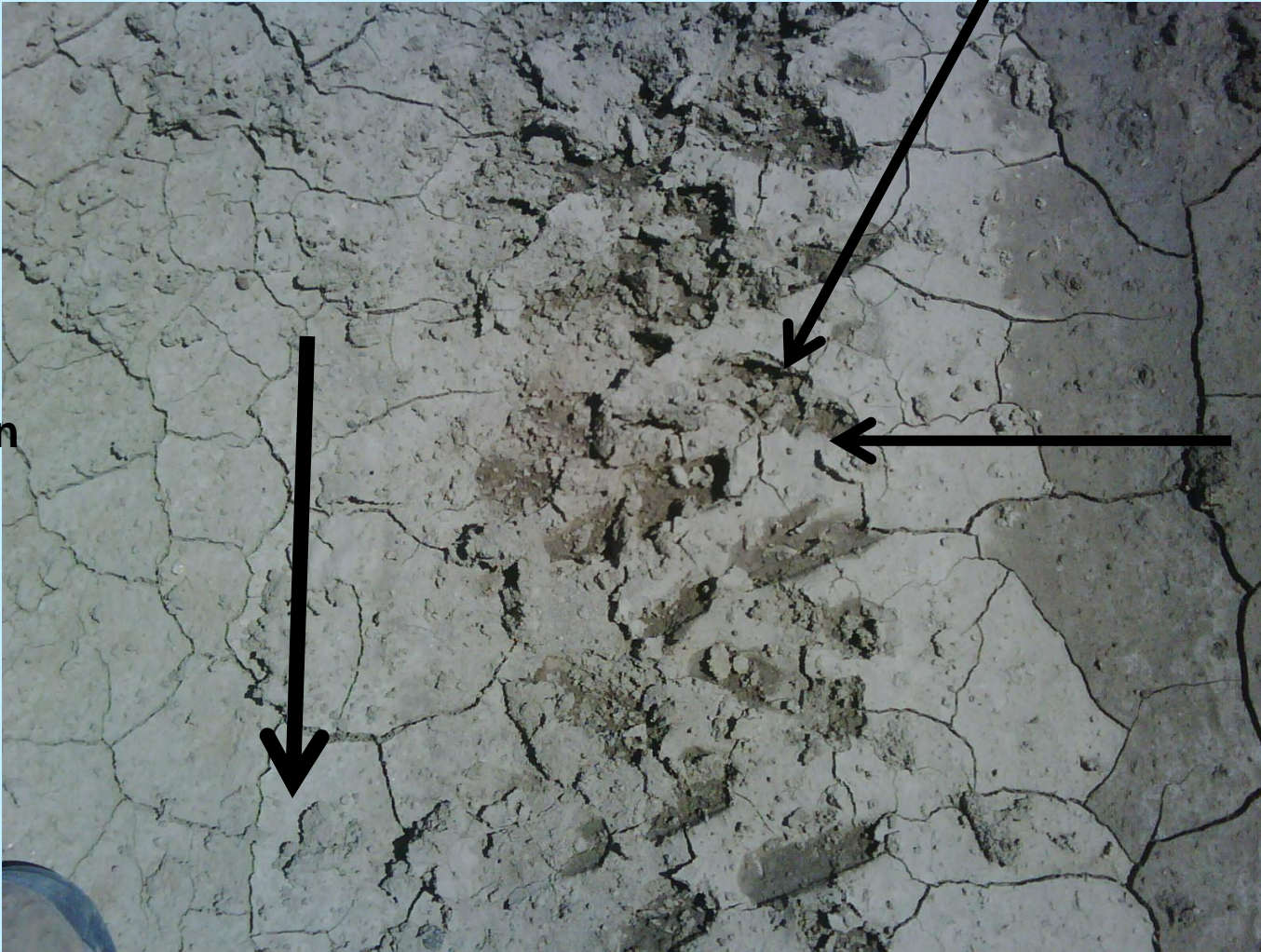




# Close-up of same tracks

Lip pushed up on back side

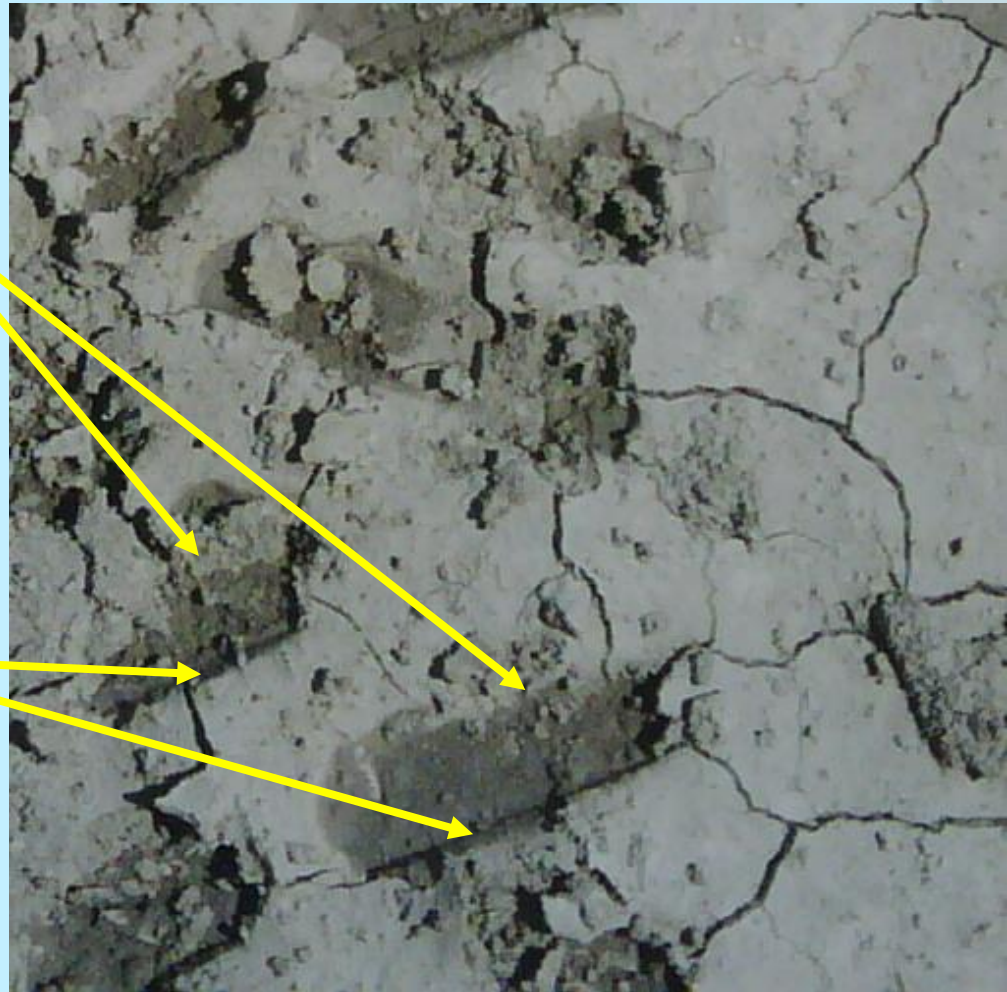
Direction of travel



Clean entrance

Raised and  
disturbed edge

Crisp edge



# What kind of tracks does a vehicle make crossing water?

Standing water in small puddle— difficult to tell, water sloshes back and forth and washes out tracks on both sides of puddle

Moving water— water sloshes forward and washes out tracks on the “out” side but the moving water of the stream prevents the water from sloshing back on the “in” side.



**Which way was the vehicle moving across running water?**

**Outgoing track is washed away**



**Entering track remains**



**Entering track**





**Exiting track**



# Two sets of tracks, what story do they tell?



The water washed away the tracks on the outgoing side

Returning, tracks enter the water

A vehicle crossed the stream, went up the road, turned around and crossed the stream again.



What story are these tracks telling us?



The grooves indicate the tire is flat and the rim is running on the ground.

# NOW THAT YOU HAVE FOUND THE VEHICLE

## The man-tracking starts!

What can we learn about our subject and can we construct a story that will lead us to the subject/s?

The tracks tell the story!

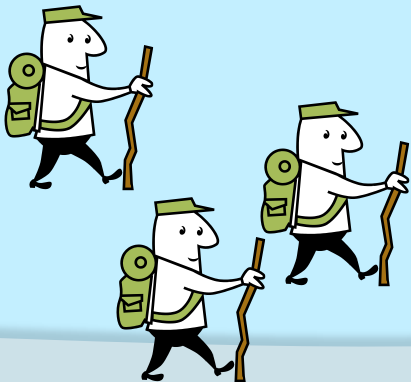


# The Scene

- When first at located vehicle, PLS or LKP etc. it is important to secure the scene.
- Caution tape and searcher's vehicles can be effective in securing a 100- yard perimeter around vehicle/PLS/LKP.
- If a vehicle is found, only one tracker should approach to determine if the subject is there.
- CP is notified of location and that subject is not there.

# When approaching the vehicle of a missing subject:

1. Only one searcher should approach.
2. He/she should attempt to establish how long the vehicle has been parked.
3. He/she should attempt to identify track or tracks leaving the vehicle and how many people there were.



## What clues can be gathered from the vehicle and its contents?

- Why is the vehicle there - stuck in sand, flat tire, mechanical trouble?
- How long has it been there - is the engine hot or cold?
- What were the subject/s doing- hunting, hiking, photography?
- Is there equipment/supplies/other items in the vehicle that give clues?

## Read the story from the tracks:

- How many subjects are there - one or more?
- What is the direction of travel - if more than one subject, are they traveling together?
- From the surroundings, can you determine why the subjects are going in a particular direction?
- How old are the tracks - how much of a head start do the subject/s have?

# What story can be gathered from tracks?

## Is there one set of tracks or more than one set?



Look for distinctive tread markings between sets of tracks or the pattern made by the type of stride of each set.

Do the tracks have distinctive characteristics?  
Does the person walk with toe-in or toe-out?

Toe out



Where prints are not distinctive, angle of prints can give direction of travel



# Can you determine WHY they are going in a particular direction?

- If at night, glow of city lights or residence
- In the direction of noise; campers, dogs barking, shots, highway sounds
- Going in the direction of a road or river
- Climbing a hill/mountain to get a better view or establish cell phone coverage
- To escape a threat (real or perceived)
- Going toward a known area or destination

## Classify the clues-

- Are they “Conclusive” – definitely made by the subject?
  - tracks leaving vehicle or PLS/LKP
  - note left in vehicle or in dirt
  - brand of cigarettes
- Or are they “Non-conclusive” – tracks or clues of questionable origin?
  - tracks in contaminated area
  - non-distinctive water bottle or candy wrapper
  - broken vegetation

# INDEXING OR AGING TRACKS

It's very important to know when a track was made-

today? last night? yesterday?

Is it our subject or another hiker from several days ago?

# INDEXING

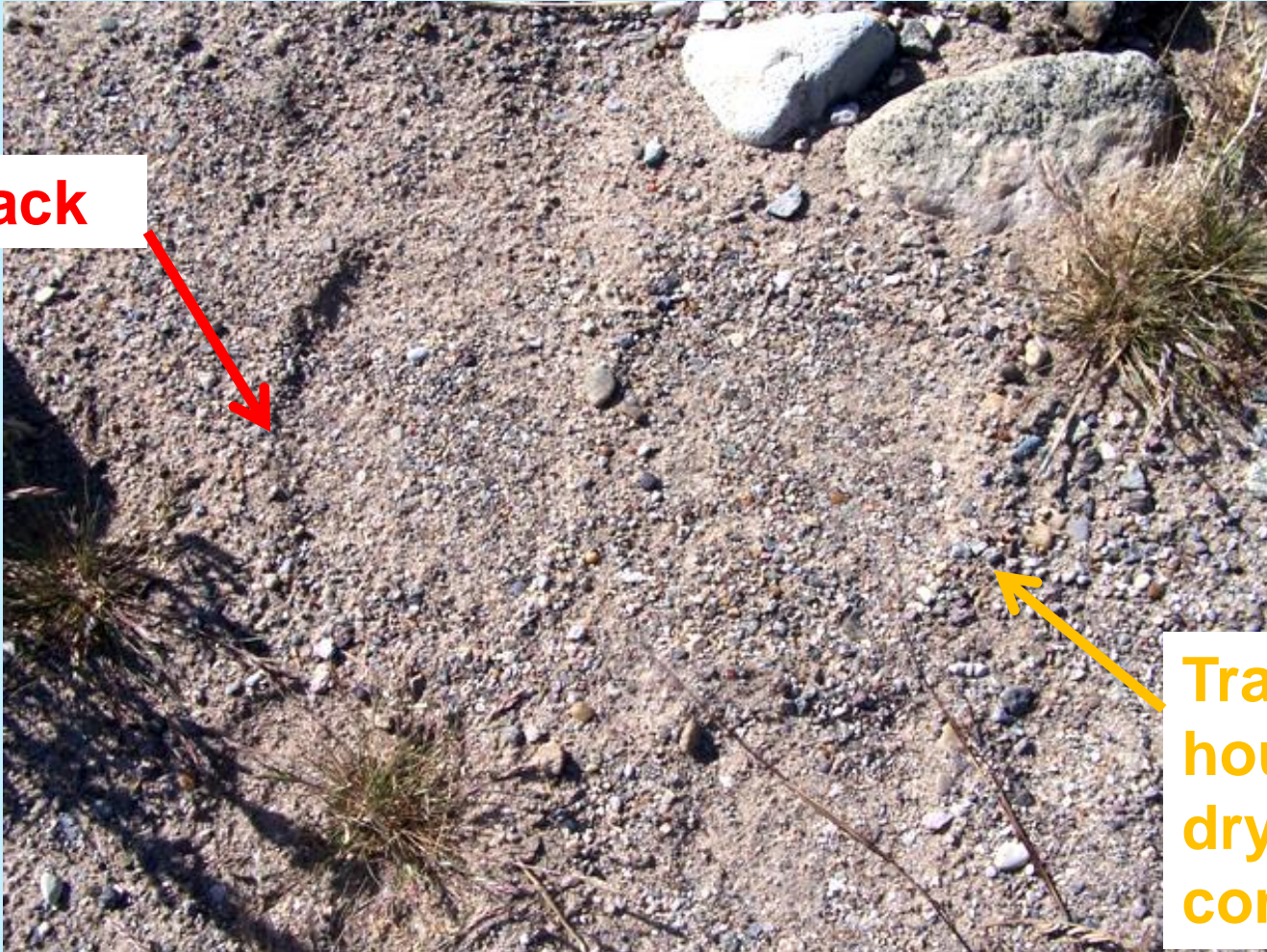
- Indexing, or aging a track, takes practice. It is perfected by studying how tracks degrade over time.
- Weather plays a big part in the degrading of tracks. Do your own study to learn indexing. Monitor a track in your back yard - check it in one hour, one day, several days, etc.
- When a track is first set down on a surface it tends to have sharp edges. As time and the elements degrade the track, the edges become rounded and the sides slough off into the track.
- Moisture and soil composition play a part in the preservation of tracks.

# INDEXING

- The more moisture content in the soil, the longer it holds together. The less moisture, the quicker the elements can degrade the track.
- Information gathered from tracks can help determine a time line, which tells a story.
  - **Example:** It rained lightly Saturday between midnight and 6 a.m. The subject was last seen at 9:55 p.m.
  - The search started at 6:00 a.m.
  - The first tracks found had rain impressions - the subject had left before it rained, between 9:55 p.m. & midnight.
  - Continued searching found tracks without rain impressions at 7:00 a.m. Therefore, the subject was at that particular location after the rain stopped- after 6:00 a.m.
  - So approximately, how far out is the subject from you?

To get an idea of the age of a track, make a track next to the one in question and note the differences.

**New track**



**Track 1  
hour old,  
dry, windy  
conditions**

These tracks were made after a freezing night.

During a night when the temperature drops below freezing, the upper part of moist ground freezes, pushing up a crust. If a track is made in the morning, the tracks crush the crust formed during the night. If made before the night freeze, they are also raised by the freezing ground.



Track on ant hill. When active, ants will rebuild their nest within one hour. Ant hills are also good “track traps”.





# INDEXING- non-disturbed ant hill



Disturbed ant hill- disturbance less than one hour old.



## Disturbed ant hill – One hour later



INDEXING- tracks age depending on various factors- moisture content of soil, wind, humidity, animals, etc. As the track degrades, the sharp edges of imprints become rounded.



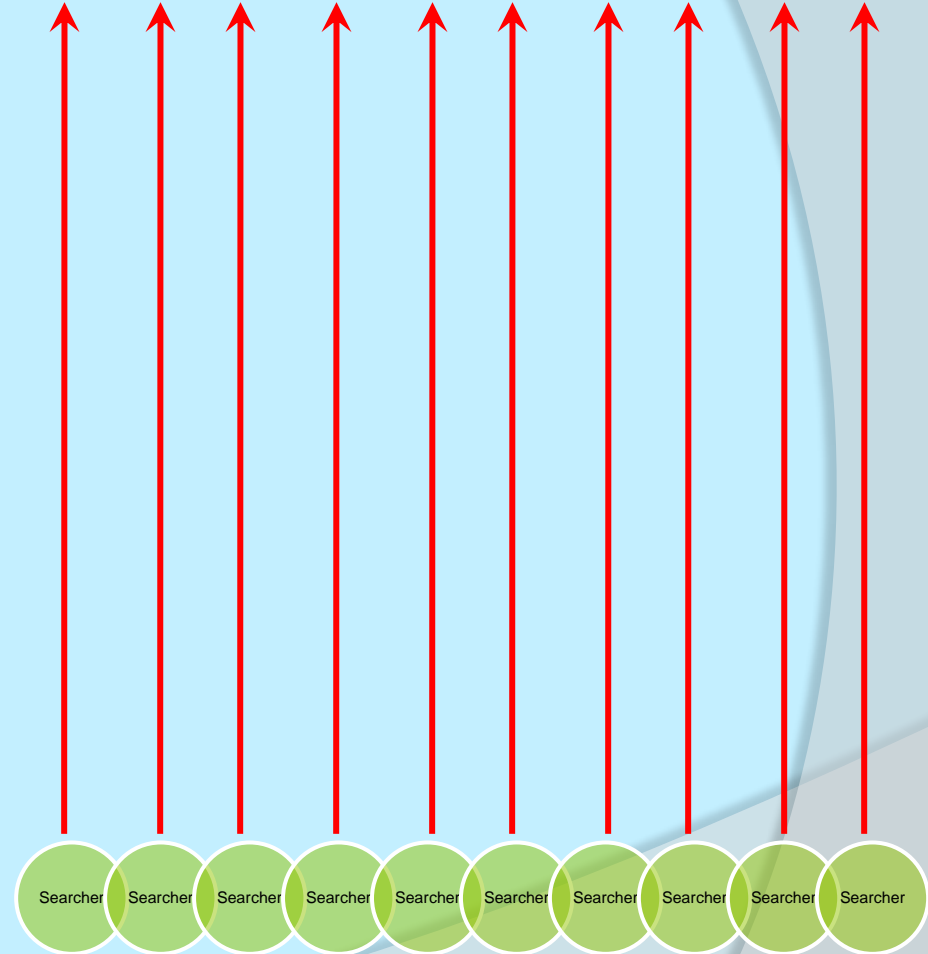
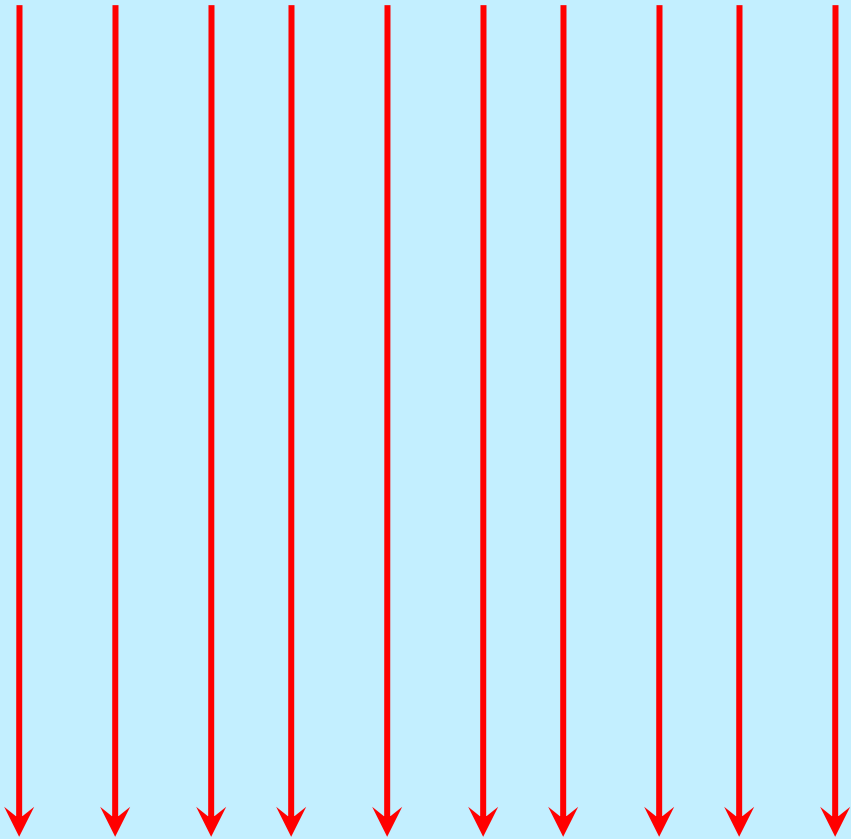
# WHERE TO LOOK FOR TRACKS

- narrow parts of a wash
- sandy areas
- patches of dirt between rocks



# Line Searches

- Are used to locate clues
- Use large numbers of personnel
- Use readily available landmarks in the field
- Use caution using GPS lines



Line Shifts

END OF  
PRESENTATION

QUESTIONS?

