

Sand & Gravel Borrow pit Restoration

Joshua Tree National Park



Restoration Goals

- National Park Policy for disturbed lands states: *“The NPS will establish natural functions and processes in human-disturbed natural systems in parks unless otherwise directed by congress.”*
- Sites where natural functions/processes are beyond complete restoration, will be partially restored to create stable landforms that will eventually sustain desired plants and habitats

Criteria for initiating restoration actions:

Restoration actions must accomplish at least one of the following:

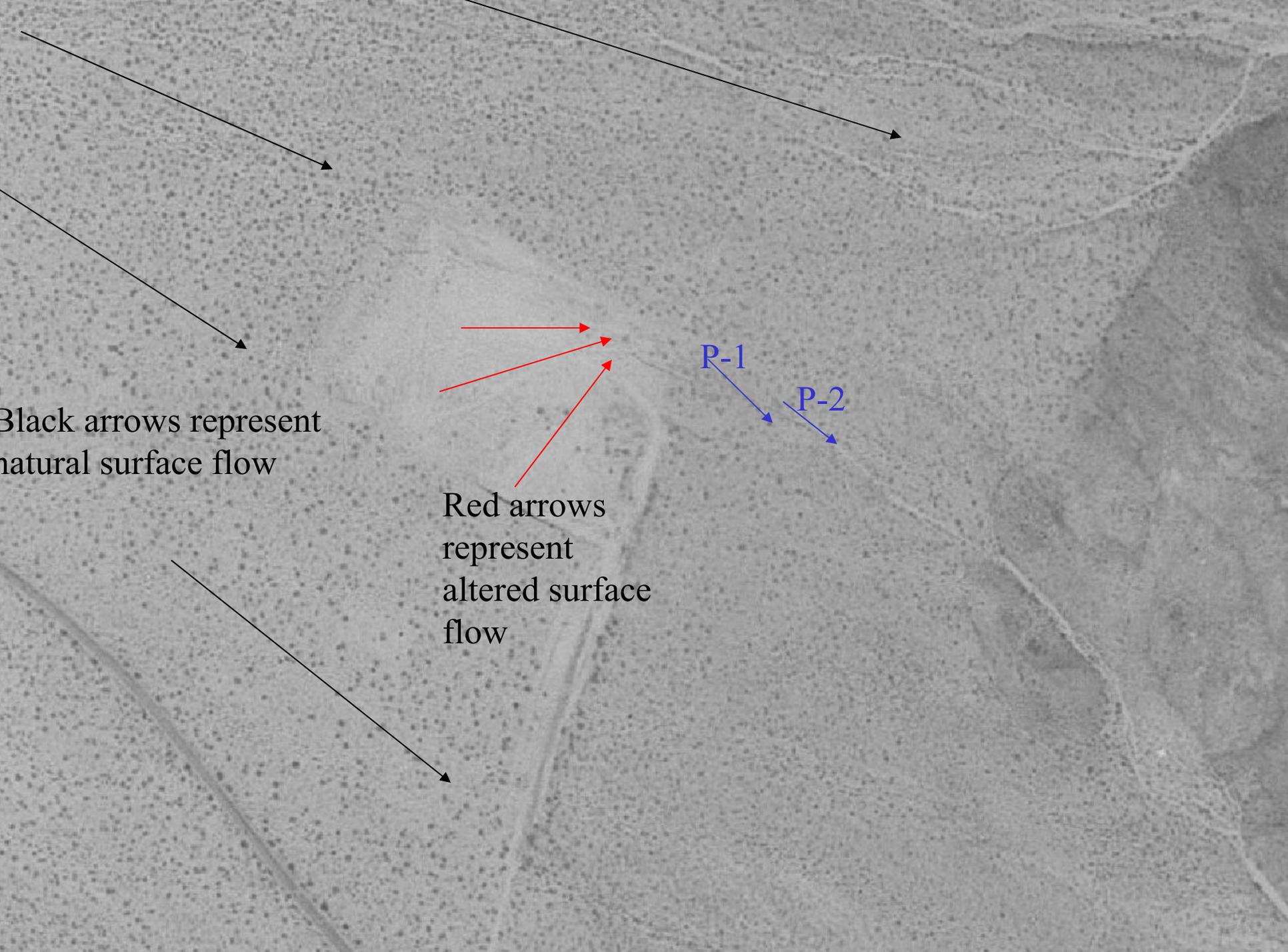
- Will accelerate re-vegetation of the site
- Will reduce erosion and stabilize soils and slopes
- Will reduce visual impacts of the site

Restoration Recommendations

- Major recontouring and restoration
- Partial restoration
- Minor recontouring and restoration
- Handwork / Plantings
- No action

Pistol Range Borrow Pit





Black arrows represent
natural surface flow

Red arrows
represent
altered surface
flow

P-1

P-2

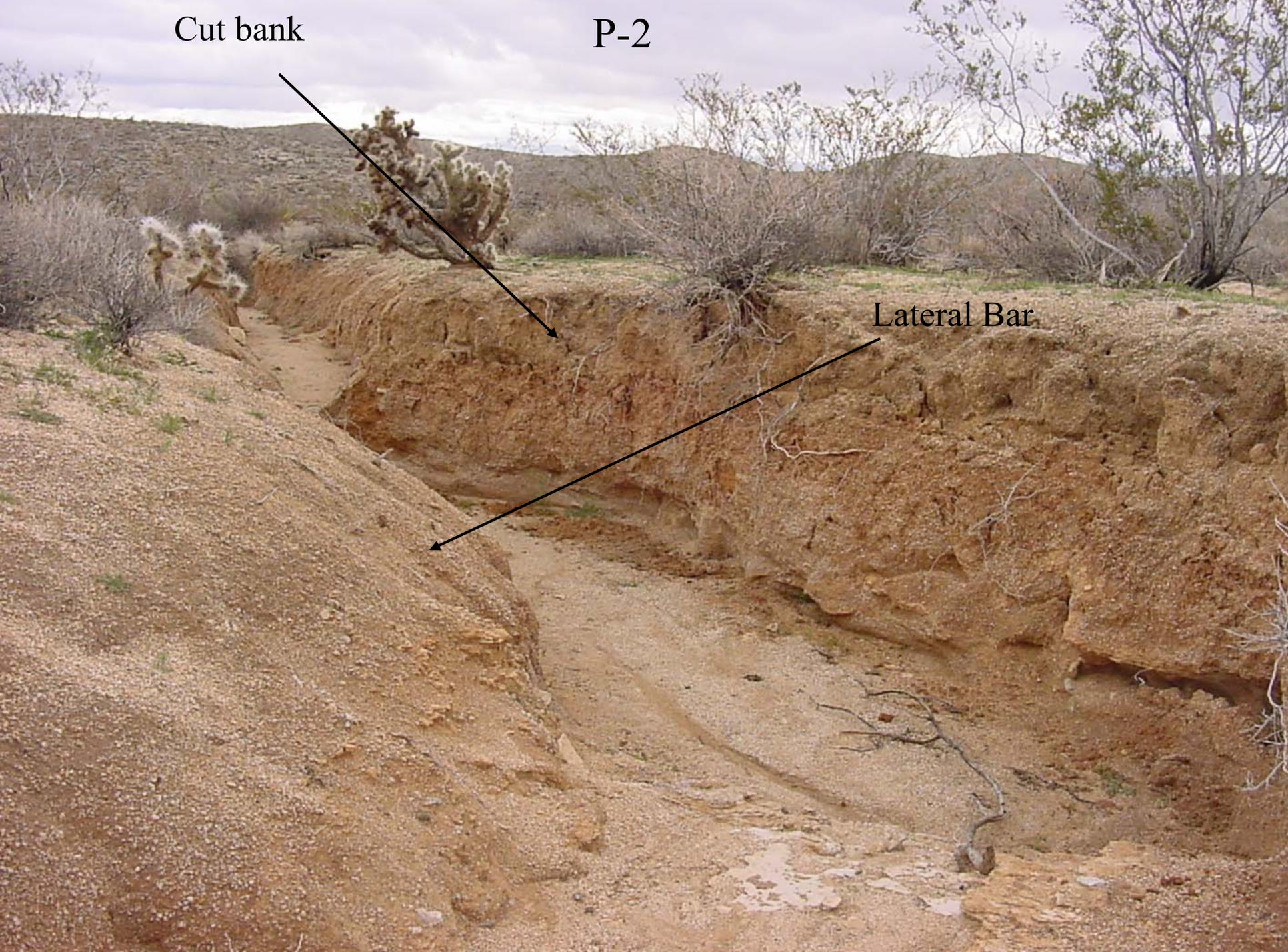
P-1



Cut bank

P-2

Lateral Bar



Alternatives/Risks

- Import sand or gravel from exterior source
- Spread of exotic plant species via soil and or earth moving equipment
- Import material from within the park (e.g. from waste rock from AML or wash material from storms)
- Spread of plant species from one part of the park to another including exotics
- Sulfide minerals leaching from waste rock

Alternatives/Risks

- No action
- Natural fluvial process will continue to degrade

Mitigation of Risks

- Sterilize all soils and equipment prior to importation
- Chemical analysis of representative waste rock prior to importation or placement
- No import material will be placed in the upper three feet of fill (germination zone)

Proposed plan of action

- Select one site for a pilot program
- Import acceptable material derived from the park (e.g. AML material or storm material)
- Hold fill level three feet below the surface
- Surface fill will be completed with on-site or locally derived native material
- Re-vegetate area with similar plant species
- Set-up initial watering program
- Set-up monitoring program for exotic plants