

# Sonoran Native Tree Rehabilitation Protocol

Side-by-side guidance for salvaged & replanted mesquite, ironwood, and palo verde. Designed for crews: concise, practical, and stress-aware.

# Three Trees, Three Behaviors

Each species reacts differently after salvage. Use the right air-spade depth, backfill mix, mulch, and irrigation cadence to avoid stress failures.



**MESQUITE**

Aggressive, fastest recovery



**IRONWOOD**

Most conservative, stress-sensitive



**PALO VERDE**

Fast top growth, shallow root risk

## Fast

MESQUITE RECOVERY

## Slow

IRONWOOD RECOVERY

## Surface

PALO VERDE RISK

CATEGORY	MESQUITE	IRONWOOD	PALO VERDE
Physiology	Aggressive desert legume	Conservative, stress-sensitive	Opportunistic, fast top growth
Air-Spade	8–12" radial or trench OK	6–10" panelized zones only	8–10" radial OK, avoid overexposure
Backfill	50–60% native, 30–40% 3/8" granite	50–60% native, 40–50% 3/8" granite	60–70% native, 30–40% 3/8" granite
Compost in Backfill	Optional ≤10%	Never	Never
Mulch	1–2" coarse chips (optional)	Critical 1.5–2" low-N chips	1–2" coarse chips (helpful)
Iron	Sometimes; any warm season	Yes EDDHA; delay 4–8 wks	Sometimes; delay 2–4 wks
Irrigation	Deep & infrequent	Deep, infrequent, allow dry-down	Moderate frequency; avoid surface wetting
Failure Mode	Overwatering	Over-amending / over-watering	Surface rooting & instability

# Most Forgiving

Mesquite recovers fastest and tolerates light organic input. Goal: stabilize, then improve.

## Air-Spade

8–12" radial or trench. Avoid over-excavation near trunk.

## Backfill

50–60% native + 30–40% 3/8" granite. Compost optional ≤10%.

## Mulch

1–2" coarse chips, 6–8" trunk clearance. Helpful but optional.

## Biology & Nutrition

- Chelated iron: only if needed; low sensitivity.
- Bacterial drench acceptable; fungal/balanced extract beneficial.
- Nitrogen sensitivity: low.

## Irrigation & Risk

- Deep, infrequent cycles; let soil breathe between sets.
- Biggest risk: overwatering.

**Crew logic:** "Stabilize, then improve." Mesquite tolerates careful manipulation; keep water deep, don't overdo amendments.

# Most Unforgiving

Ironwood is slow to recover and highly stress-sensitive. Oxygen and temperature moderation are critical. "Do less, do it precisely."

## Air-Spade

6–10\'' panelized zones only; avoid full radial exposure.

## Backfill

50–60% native + 40–50% 3/8\'' granite. No compost.

## Mulch

Critical: 1.5–2\'' coarse, low-N chips.  
8\''+ trunk clearance.

## Biology & Nutrition

- Chelated iron (EDDHA only), delayed 4–8 weeks post-replant.
- Bacterial drenches: generally no. Fungal/balanced only if stressed.
- Nitrogen sensitivity: high.

## Irrigation & Risk

- Deep, infrequent, with dry-down. Guard against saturated conditions.
- Biggest risk: over-amending and over-watering.

**Crew logic:** "Do less, but do it precisely." Protect oxygen around roots; keep mulch for temperature; avoid extra inputs.

# Deceptively Quick

Palo verde flashes top growth fast but can fail later if roots stay shallow or soil stays wet at the surface.

## Air-Spade

8–10" radial OK; avoid overexposure.

## Backfill

60–70% native + 30–40% 3/8" granite. No compost.

## Mulch

1–2" coarse chips; 6–8" trunk clearance. Helpful.

## Biology & Nutrition

- Chelated iron sometimes; delay 2–4 weeks post-replant.
- Biology: sometimes helpful; monitor for shallow rooting risk.
- Nitrogen sensitivity: moderate.

## Irrigation & Risk

- Moderate frequency; avoid surface wetting that encourages shallow roots.
- Biggest risk: surface rooting and instability.

**Crew logic:** "Control growth, don't stimulate it." Keep water deeper, watch for surface roots, and avoid wet topsoil.

## Mulch vs. Biology (Side-by-Side)

### Mesquite

Mulch helpful; biology often beneficial.

### Ironwood

Mulch essential; biology usually harmful.

### Palo Verde

Mulch helpful; biology neutral → sometimes risky.

**Quick Checklist:** Use the right air-spade depth; follow backfill ratios; add mulch only at specified depth/clearance; delay iron by species; water deep and let the soil breathe.