# Good Strategies for Cold Damage in the Landscape: Recovery, Not Panic.

A plant's ability to tolerate cold temperatures depends on its species as well as how low the temperature drops and how quickly it declines. Plants native to tropical or subtropical regions are especially vulnerable to cold damage. One common type of winter injury is **plant desiccation** or drying out. In mild cases, this appears as leaf-tip or marginal burn, while severe cases result in completely brown leaves. Desiccation occurs when dry winds and solar radiation cause plants to lose water faster than it can be absorbed or transported by roots that are limited by cold soil temperatures.

Landscape plant showing cold damage symptoms

Temperatures between 32°F and 50°F can cause **chilling injury** by disrupting enzymatic activity, photosynthesis, respiration, and membrane function, which reduces the plant's ability to maintain normal metabolic processes. When temperatures fall below 32°F, **freezing injury** may occur as ice crystals form within plant cells. This leads to cellular dehydration, membrane damage, and ultimately the loss of cell integrity.

Total freezing injury in this palm


Rubber plant with cold damage, not freezing

Mature fronds will cold damage symptoms

The severity of cold damage is influenced by several interacting factors, including the lowest temperature reached, the duration of exposure, the rate of temperature decrease, plant hydration status, wind conditions, and the plant's inherent cold hardiness. Cold injury can affect all plant parts—flowers, fruits, leaves, stems, trunks, roots, and buds. Flowers and fruits are particularly sensitive because they have limited capacity to develop cold tolerance. Actively growing tissues in young plants are generally more susceptible than dormant tissues, and tropical or subtropical species lack many of the adaptive mechanisms that allow temperate plants to survive chilling and freezing stress. Consequently, cold events can cause symptoms ranging from minor leaf damage to severe vascular injury, stem dieback, and root loss.

Early symptoms of cracked pseudobark due to cold damage in queen palm. Courtesy: Dr. T. Broschat, UF/IFAS

**Managing Cold Damage in Plants**

**1. Allow time before acting**

Cold damage often looks worse immediately after a freeze. Wait at least 3–7 days, or longer, before assessing injury. Avoid fertilizing, heavy pruning, or excessive watering during this period, as these actions can further stress the plant and encourage weak new growth.

**2. Adjust irrigation practices**

Return to normal watering schedules, keeping the soil slightly moist but not saturated. Dry soils increase root stress, while overwatering can limit oxygen availability. Watering in the morning is ideal.

**3. Prune carefully and at the right time**

*Pruning is the most critical step in recovery*. Identify cold-injured wood using the scratch test: gently scrape the bark to reveal the cambium layer. Green tissue indicates living wood, while brown or black tissue indicates damage. Prune back to healthy tissue, recognizing that damage often occurs only at branch tips. If unsure, delay pruning until new growth appears to avoid removing

living wood. Dead leaves may be removed once they turn brown. After severe cold events, recovery can be slow, so patience is essential.

*Rule of thumb: green tissue is alive; brown tissue is dead.* Waiting to prune also allows dead tissue to insulate surviving plant parts and protects them from additional freezes.

**4. Delay fertilization**

Wait until spring growth resumes before fertilizing. Use a light, slow-release fertilizer and avoid high nitrogen early in the season, as tender new growth is vulnerable to renewed cold injury.

**5. Special considerations for palms**

Do not remove green fronds, as even brown fronds help protect the growing bud. Monitor the spear leaf: a firm spear indicates good health, while an easily pulled spear suggests possible bud rot. **If the spear pulls, apply a slowly available copper fungicide, such as copper hydroxide (not copper sulfate)**, to the bud area and keep it dry to prevent secondary infections. Some palms recover slowly and require extended observation.

Spear leaf basal rot in spindle palm. Courtesy of T. Broschat, UF/IFAS

Chilling injury on coconut palm. Mature fronds are more susceptible than young fronds

**6. Encourage long-term recovery**

Apply 2–3 inches of mulch to protect roots, reduce wind exposure, and avoid compacting soil around the plant. Recovery may take several months, and many tropical or subtropical plants can regenerate from their roots even if aboveground growth is lost.

Remember: **Many tropical or sub-tropical plants regrow from roots even if the tops die.**

**Key point: Patience! Patience and Patience! Plants are living organism not plastic!**

**Resources:**

Cold damage on palms, https://edis.ifas.ufl.edu/publication/MG318/pdf

Cold protection of landscape plants, **ENH1/MG025: Cold Protection of Landscape Plants**

Freeze Damage on Plants, https://site.extension.uga.edu/madison/2026/01/freeze-damage-on-plants/

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Posted: February 2, 2026

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