

# CASE STUDY

## London Creek Environmental Reserve

### Broad-scale Environmental Offset Tree Planting

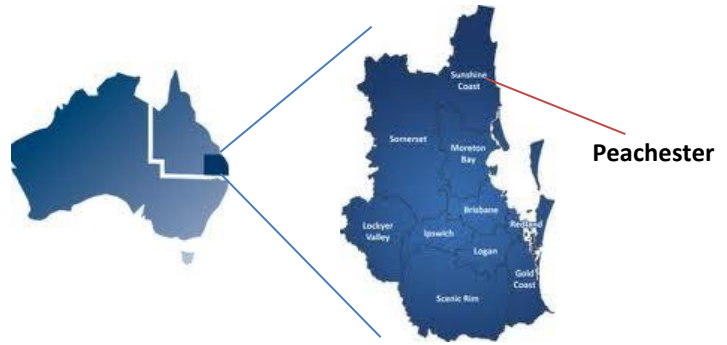
London Creek Environmental Reserve is a large bushland reserve owned by Sunshine Coast Council near Peachester. It consists primarily of tall *Eucalyptus pilularis* and *Eucalyptus grandis* forests on undulating hills adjacent to London Creek.

Sunshine Coast Council engaged Landscape Conservation to undertake the necessary ground preparation, planting and maintenance of 26,300 trees across 9ha of previously grazed open paddock areas of the site.

This revegetation project was undertaken as part of a partnership between Sunshine Coast Council and Energex Ltd to offset for tree clearing for essential electrical infrastructure in the region.

Site establishment occurred in May 2013 and included establishing a site office and secure compound and constructing a temporary site nursery. Ground preparation and initial (pioneer) planting was undertaken over a 3 month period and watering occurred as necessary over the first 2 months of establishment. A secondary (successional) round of planting occurred in 2017. A total of 5 years of site maintenance was scheduled and included mowing of inter-row areas where possible, spraying weeds and exotic grasses and generally ensuring optimal establishment and development of the planted trees.

Survival rate was 97% across both plantings with a high diversity of species reaching an average height of 8m over the 5 years.



Ground preparation for "random" planting areas including individual spray circles



Ground preparation for "contour" planting areas including ripping and spraying lines on the contour.



## Preparation, planting and maintenance schedule:

**Soil testing** – Soil samples taken from several portions of the site were analysed with the results used to develop a suitable fertiliser program for the establishing trees.

**Tractor slashing** – Slashing of open grassy areas was carried out to improve access and to reduce competition from existing tall grass and weeds.

**Deep ripping** – Where access permitted, revegetation areas were then deep ripped with a “Yeomans Keyline” plough. This method of ploughing gently lifts and loosens the soil with very little profile disturbance, leaving well prepared ground in which to plant. Ripping occurred along existing natural contours to minimise overall landscape disturbance, reduce erosion potential and to give the the most “natural” look possible.

**Weed treatment** - Immediately following the ploughing, a non-residual knockdown herbicide (Weedmaster Duo) was applied in a 1 meter strip along each planting line. Spraying of planting circles was conducted by knapsack in the more difficult to access random planting zones.

**Installation of native tubestock**– All tubestock were treated with “Envy” anti-transpirant and “D-Ter” herbivore deterrent in our temporary nursery prior to planting. The seedlings were then planted with a formulated fertiliser blend, with protective coreflute tree guards and mulched with sugarcane mulch.

**Initial watering** – Each seedling was initially watered in with 3-4 litres of water sourced from the property. Liquid additives included in this initial watering were “Seasol” to help minimise transplant shock and encourage early root development, “Auxinone” for growth promotion and Liquid Lime to quickly adjust soil pH as the site was slightly too acidic for optimal plant development.

**Site maintenance** – Weeds and grasses were sprayed or otherwise controlled directly around the trees to minimize competition. It is especially critical that this is carried out well during the first twelve months to maximise soil moisture and nutrients available to the developing plants. General weed control across the reserve was also undertaken during maintenance visits.

### **Project outcomes after five years:**

- Average canopy height – 8m (some reaching 15m)
- Average canopy cover – 95%
- Average species diversity – 17 species/100m<sup>2</sup>
- Plant mortality – just 3%
- Weed cover (including exotic grasses) – from >80% prior to planting down to <5% at project end.



Tube-stock in our temporary nursery



**2013**



**2015**



**2018**

Trees with DBH of 12cm were common after just three years of growth.

