Ecological Management
Almorah Rock Forest – Collaboration between landowners

CASE STUDY

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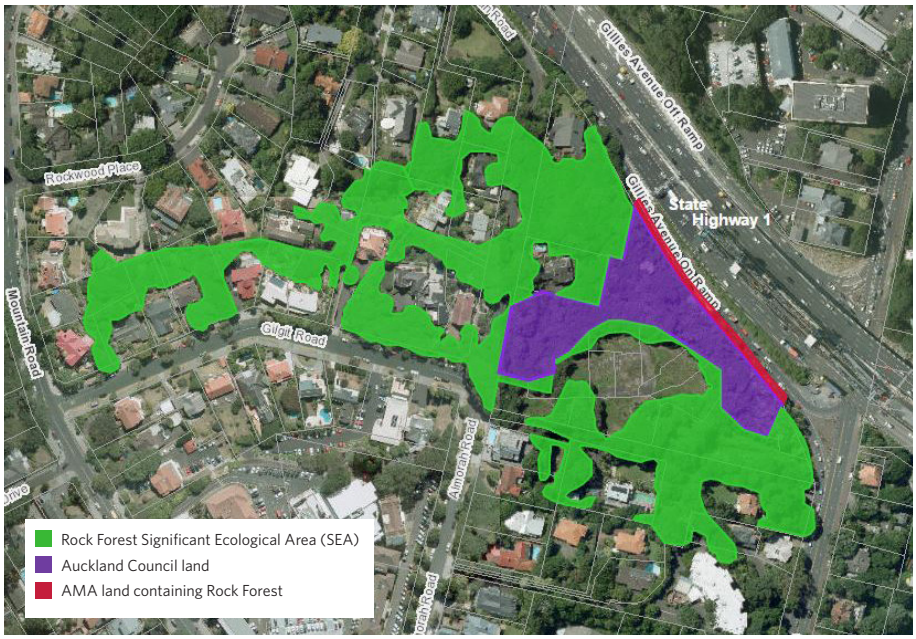


Almorah Road and State Highway 1 Gillies Avenue motorway on-ramp

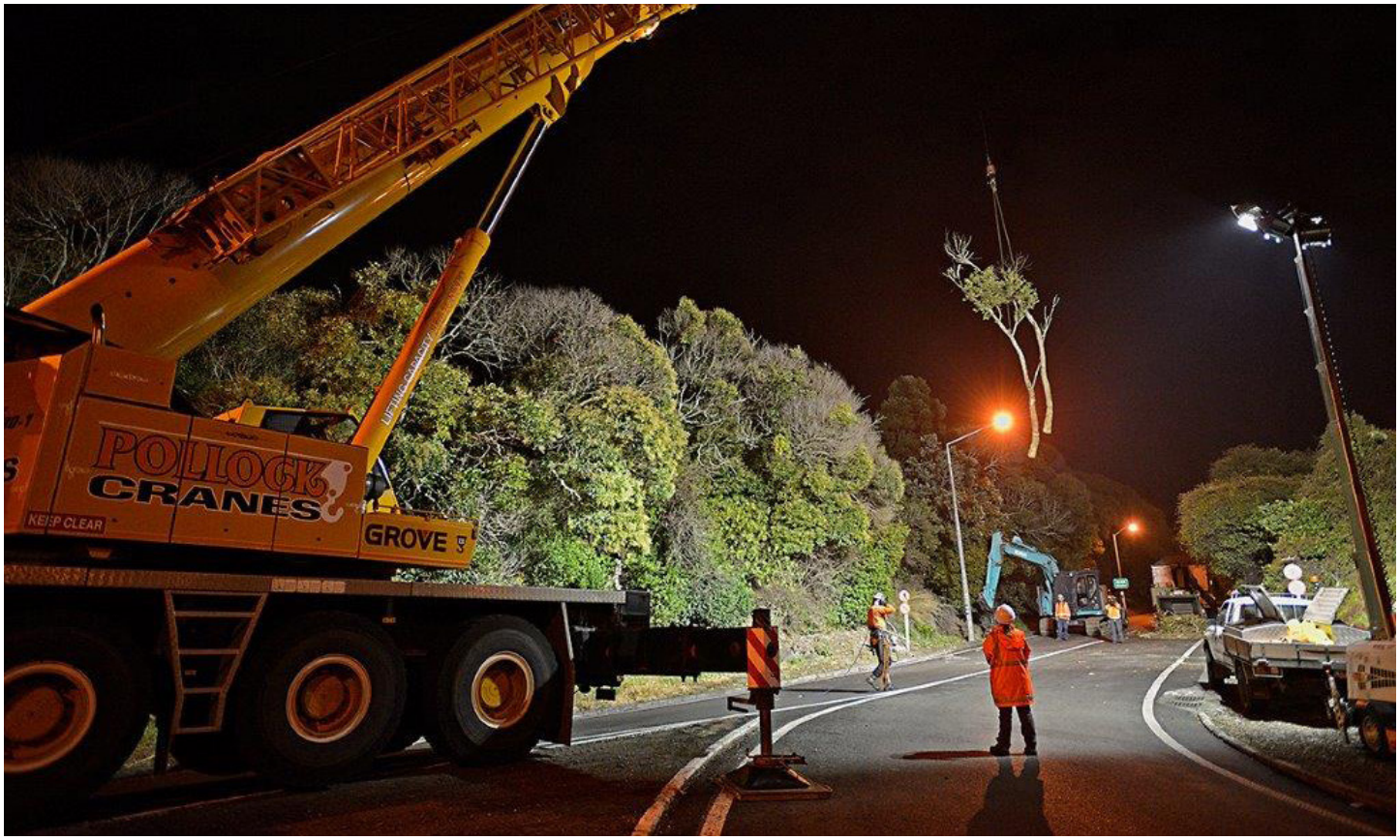
The Almorah Rock Forest. *Photo: Arno Gasteiger*

Rock Forests are unique in New Zealand and are one of the rarest ecosystems in Auckland. They are formed after the eruption of a volcano. When lava flow cools, vegetation emerges through cracks in the flows and boulder fields. Mt Eden is thought to have erupted 28,000 years ago and contributed to more than 5,000 ha of rock forest in the Auckland region. Today, due to land use changes, rock forest ecosystems have been reduced to approximately 0.5% of their original extent and are now restricted to small isolated fragments.

The Almorah Rock Forest ('Rock Forest') accounts for approximately 11% (3.2ha) of Auckland's remaining rock forest and is located on either side of Almorah Road, Epsom, covering both public and private land. The Rock Forest is comprised of a range of native species including kohekohe, titoki, pigeonwood and mahoe that have grown through and around large lava boulders. Sickle fern (Pellaea falcata) has recently been found within the Almorah Rock Forest. This is a nationally threatened native fern that is actively managed by Auckland Council (AC).

The largest contiguous area of the Rock Forest is situated between Almorah Road and the State Highway 1 Gillies Avenue motorway on-ramp. This area was originally purchased by the Department of Conservation in 2001 and then vested with AC. The NZ Transport Agency's Auckland Motorway Alliance (AMA) also manages a small strip of land (0.09 ha) containing rock forest, that runs along the north eastern side of the Rock Forest reserve and is immediately adjacent to the Gillies Avenue on-ramp.

A tree privet infestation and localised patches of madeira vine and wandering Jew were identified bounding the AC/NZ Transport Agency (AMA) land that posed a significant threat to the ecological integrity of the Rock Forest. This case study focuses on the coordinated efforts of the AMA, the AC Biodiversity team and contractors to remove pest plants; in particular, the privet tree infestation from the Rock Forest.



Night removal of tree privet from Gillies Avenue motorway on-ramp. *Photo: Arno Gasteiger*

Collaboration

In 2013 the significance of Rock Forest was identified in the Albert-Eden Local Board Ecological Prioritisation Plan (July 2013) and as such has been designated a Significant Ecological Area under the Auckland Unitary Plan. A five year restoration plan began in 2014 by the AC Biodiversity team and involves weed and pest control within the Rock Forest. As part of the restoration plan, a tree privet (Ligustrum lucidum) infestation along the north eastern side of the Rock Forest was identified, bounding both the NZ Transport Agency and AC land. Tree privet is identified as a pest plant in the Auckland Regional Pest Management Strategy 2007–2012. Left uncontrolled the tree privet infestation threatened to prevent natural forest regeneration and succession of the Rock Forest. AC recognised that any infestations left on the NZ Transport Agency land would act as a seed source for recolonisation, posing a significant threat to their restoration efforts and overall ecological integrity of the Rock Forest.

A convincing case was presented by the AC to the AMA, requesting support for the removal of the tree privet. The Transport Agency land (managed by AMA) and adjacent motorway on-ramp were identified as providing preferential access for the removal of all pest plants from the property, as well as the removal of a number of large tree privets that were previously inaccessible in adjacent Council-owned land. This improved access presented less risk to damaging the understorey and non-target species within the Rock Forest. AC proposed a scenario whereby both parties would benefit from such a collaborative effort (refer Table).

Benefits of tree privet removal for:	
NZ Transport Agency (AMA)	**Auckland Council**
Restoration and protection of a rare ecosystem.	Restoration and protection of a rare ecosystem.
Removal of pest plant species as part of the NZ Transport Agency's pest management obligations.	Removal of a pest plant species identified in the Auckland Regional Pest Management Strategy.
Removal of trees that would otherwise require ongoing trimming and maintenance, and associated costs.	Removal of a pest plant that has the potential to recolonise the Almorah Rock Forest resulting in additional weed maintenance costs.
Removal of trees that have the potential to cause damage to the on-ramp and safety issues to occupants of passing vehicles.	Removal of a pest plant that has the potential to establish within other nearby significant ecological areas resulting in additional weed maintenance costs and reducing ecological value.

Methodology

The tree privet was located on the outer edge of the Rock Forest adjacent to the motorway on-ramp. Access for the privet removal was planned via the Gillies Avenue on-ramp to prevent damage to the Rock Forest vegetation. Like much of the pest plant control and tree removal work that AMA undertakes on the Auckland motorway, removal of the tree privet was technically challenging and required (in addition to standard maintenance management operations):

- Night works;
- Closure of the Gillies Avenue off-ramp;
- Use of a crane;
- Traffic Control Plan; and
- Noise Management Plan, including letter drops and information boards to inform residents.

Outcome

All forty, young to mature, tree privets (and other pest plants) were successfully removed from the site over three nights. Over the course of each night, trees were carefully cut and craned from the bank onto the road, where they were mulched on site, reducing removal costs. Stumps were treated with pesticide and left in place, allowing bank stability to be maintained and minimising damage to native undergrowth. Even though the work was undertaken at night, the good communication with residents ensured no noise complaints were received.

Traffic management was an essential part of the privet removal operations. Pest removal sub-contractors were not always aware of the timings for the AMA traffic control team to set up traffic management measures. This meant that on some occasions there was a delay between when sub-contractors arrived, to when they could start work. Improved communication and co-ordination between these two parties may have streamlined the work.

Night removal of tree privet from Gillies Avenue motorway on-ramp.
Photo: Arno Gasteiger

Lessons learnt

- Resolution of ecological issues is often multidisciplinary/ cross boundary. Collaboration between landowners is essential to ensure a good ecological outcome.
- A proactive approach to collaboration by AC meant costs could be shared with AMA and workload allocated pertaining to each parties skill set.
- Pest plants have wide reaching effects. It is important that they are pro-actively managed in order to minimise their spread and impacts on biodiversity and safety.
- On site re-use of cut vegetation through mulching and leaving stumps in situ can assist with bank stability. When a plant species is known not to re-sprout from cut fragments, onsite management is a favourable option over removal off site to landfill.
- Opportunities to undertake ecological enhancements i.e. weed removals, should be capitalised upon where they exist, particularly where sensitive ecosystems and threatened species of flora and fauna are involved.
- Agreed communication plans between different teams are essential to ensure work is streamlined.
- Communication to residents is an important part of planning any noisy night works.

CONTACT DETAILS

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