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Tree Protection Plan For The Installation Of A New Under Dune Protection Wall

For: The Glen Isla Protection Society

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B.Sc. (Tech)
Level 6 Diploma in Arboriculture

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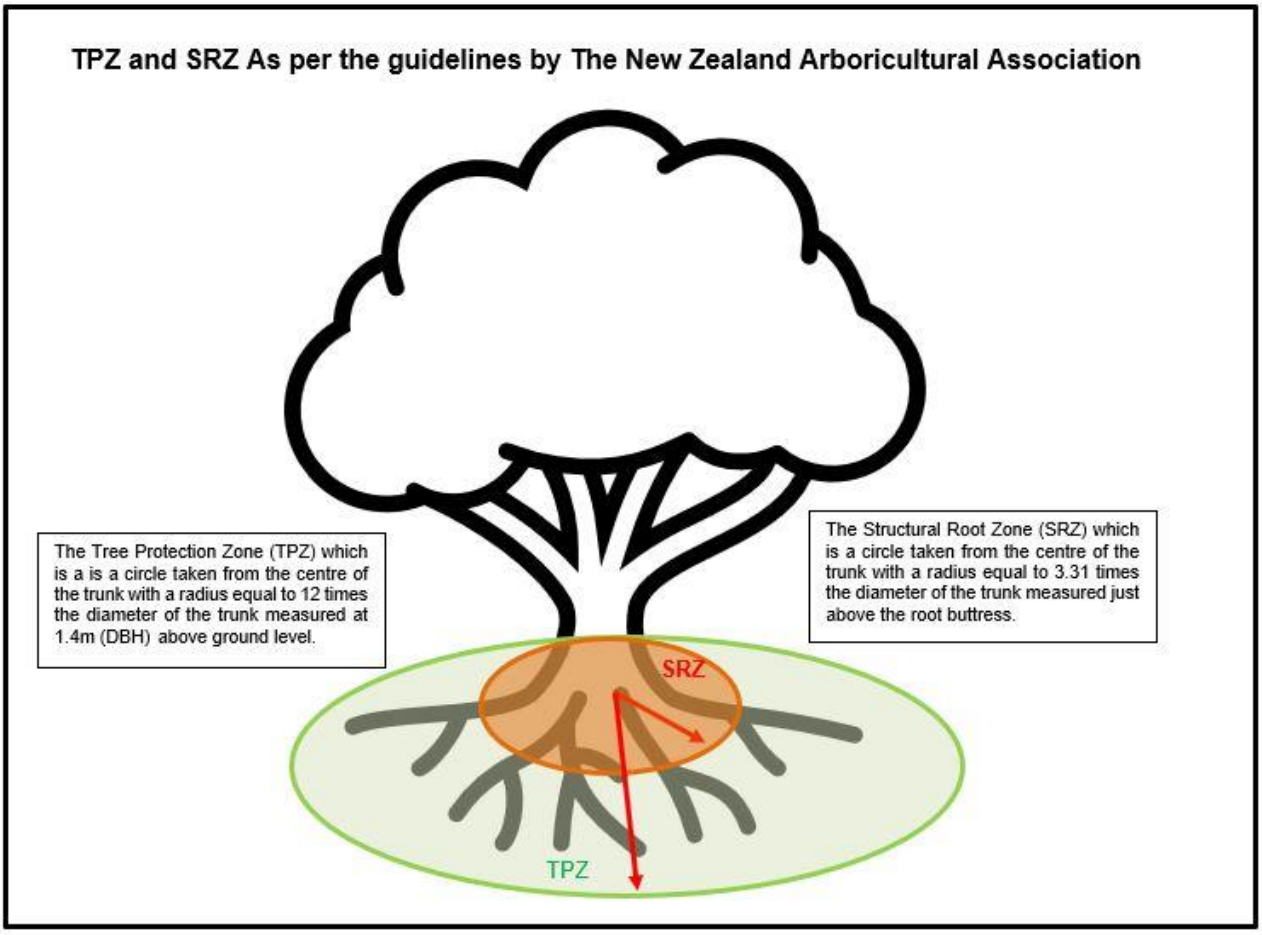
Introduction:

The following tree protection plan is to be used when planning and installing an in-dune protection wall within the Tree Protection Zone (TPZ) of a Norfolk Island Pine tree located on the beachfront corner of 13 Glen Isla Place.

The Tree Protection Zone (TPZ) is a circle with a radius 12 x the tree's trunk diameter at 1.4 metres for single trunked specimens or 10 x ground level for multi-stemmed trees.

Structural Root Zone (SRZ) is a circle with a radius of 3.31 x the trunk diameter measured just above the root buttress. The SRZ is the area where roots are required for the stability of the tree. In this area there should be no works that affect the roots.



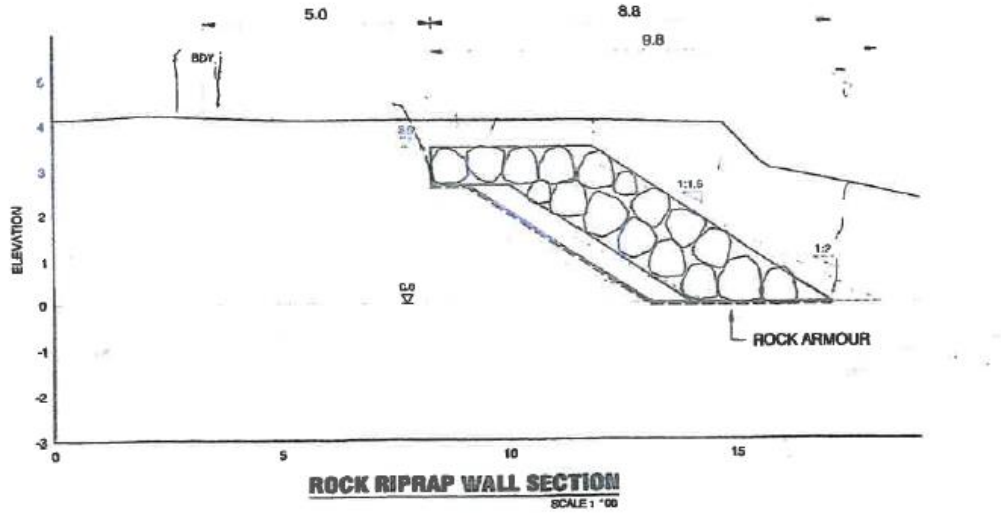
Site Specific Details:

The site is a sand dune area in front of several properties. The sand dunes here have suffered from erosion and the wall is to be installed to allow the reinstatement of the dunes and protect the area from further erosion.

The tree is a healthy Norfolk Island Pine tree approximately 25 metres tall and with a trunk diameter of 830mm. This gives a SRZ radius of 2.74 metres. Within this area there should be no excavation, no storage of materials and no use of heavy machinery.

The TPZ is the area where the trees roots will be mostly located. Works can be carried out through this area but care should be taken to not damage the trees health. The TPZ radius is 9.96 metres.

The following diagram shows the proposed wall with its elevations in metres shown on the left.



The original wall was designed to be 5 metres from the seaward boundary of the private property. Given the available space and the ability to move the wall away from the tree I would recommend giving the tree more space. Moving the wall out by at least a metre to be no less than 6 metres from the edge of

the trunk. This would be a minimum dimension of 5.6 metres from the private property boundary, and if possible it would be preferable to be moved to between 5.6 and 7.6 metres from the property boundary.

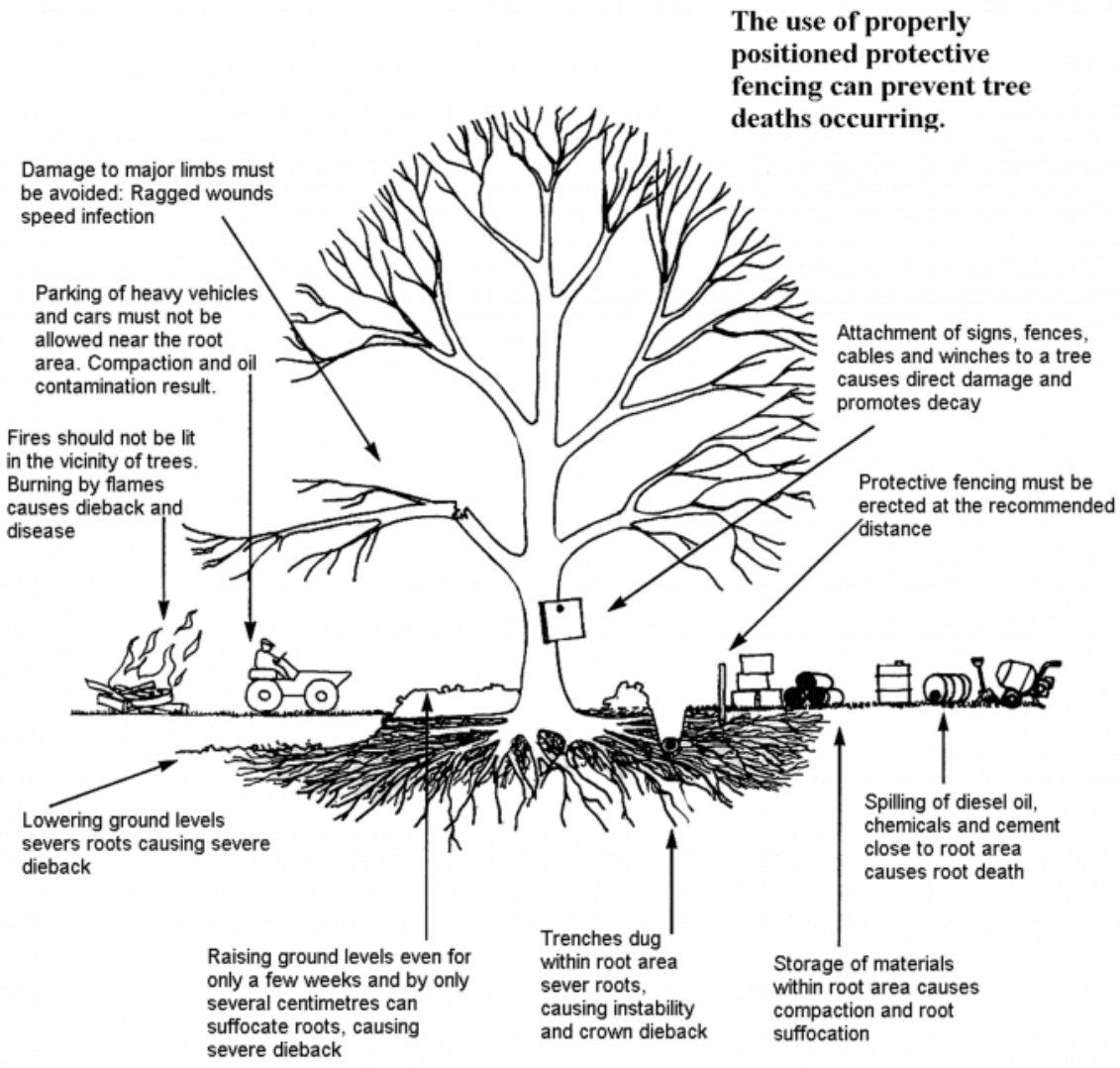
The diagram below shows the approximate location of the property boundary (white line); excavation for the wall as currently designed (red line) and the range where I would recommend the excavation be moved to (blue shaded area) 6 to 8 metres from the trunk centre or 5.6 to 7.6 metres from the property boundary. Note this diagram is not to scale.

As long as the following tree protection methodology is adhered to the trees health and stability will be affected in no more than a minor way.

Methodology:

- This Tree Protection Plan is designed to protect the tree during construction of the dune protection wall.
- An arborist should be appointed to oversee the construction works.
- Before any works begin within the TPZ of this tree a meeting should be held on site with the contractor and the arborist.
- TPZ of this tree must be protected from damage throughout the duration of the project, this includes no machinery to be operated within this area without the permission of the arborist and appropriate ground protection being in place, there must be no storage of materials, spoil or equipment within the SRZ. The use of machinery within the TPZ needs to be under the supervision of the arborist.
- I would recommend placing a low fence around the SRZ as a visual barrier to operating machinery or storing materials within this area. This fence could be sectional fence 1200mm high or fence standards and danger tape.
- The excavation should be carried out under the supervision of an arborist.
- Where roots are discovered that need to be cut, these will be pruned by the arborist.
- Roots up to 30mm in diameter can be cut cleanly with a spade. Roots larger than 30mm will be cut by the arborist to leave a clean smooth cut surface.
- To avoid further damage to the tree any roots requiring cutting must be cleanly cut back to the face of the excavation or below the required level and covered with damp material such as topsoil, hessian, or geotech fabric.
- Once the excavation of the face closest to the tree has been carried out the remainder of the works can be carried out without an arborist on site as long as the equipment is operated, and all materials are stored in areas deemed suitable by the arborist.

Common causes of Tree Death



Philip Sale BSc. (TECH), Diploma in Arboriculture

Qualifications:
Bachelor of Science and Technology (Waikato University) 1995
LVL 4 Advanced Certificate of Arboriculture (Waikato Polytechnic) 1998
LVL 6 Diploma in Arboriculture with Distinction (Waikato Institute of Technology) 2007

NZArb:
Elected as a member on the Executive of the New Zealand Arboriculture Association from November 2003 to November 2005.

Publications:
"BPR/1059 – Alectryon excelsus Titoki 'The Tapu Tree'" Autumn 2013 Tree Matters The Magazine of the New Zealand Arboricultural Association INC. Edition 57 Volume 15: Issue 1

"Tree Valuation: An Unofficial New Zealand History & Review" Autumn 2008 Tree Matters The Magazine of the New Zealand Arboricultural Association INC. Volume 10: Issue 1

"Decay and Deadwood - Are we too quick to make the final cut? The ecological importance of dead and dying trees should be considered by the Arborist." Sept 2005 Issue 27 Tree Matters The Magazine of the New Zealand Arboricultural Association INC.

"Anthracnose rips through Hobbiton. Biological warfare in middle earth?" December 2003 Issue 20 Tree Matters The Magazine of the New Zealand Arboricultural Association INC.

Recent NZArb Conferences:

Wellington (2022)
Dunedin (2018)
Rotorua (2014)
Queenstown (2020)
Tauranga (2017)
Wellington (2012)

Experience:
Arbor Care Limited: (2000 to present). I am a shareholder in the company and have been working as a consultant and project manager, working in all aspects of arboriculture. I have been undertaking tree inspections for councils, developers and private customers. I have prepared risk assessments; and reports for the purposes of obtaining resource consent for subdivisions, roading and building projects.

I have appeared in The High Court, The District Court, The Environment Court, the Disputes Tribunal, and at resource consent hearings as an expert witness.

Dryad Tree Specialists (United Kingdom): (1999 to 2000). I was employed as an arborist carrying out all aspects of practical arboriculture for Councils, Private Customers and the National Trust.

Hort Research: (1996 to 1998.) I was working as a Research Technician involved in projects developing natural controls for forestry and horticultural diseases.

Forest Research Institute: (1995). I was working as a research assistant involved in projects developing accurate carbon budgets for the New Zealand exotic forestry estate.