

## TreeFarmer Release Notes

Version 1.0	Functionality
<b>2020</b>	<ol style="list-style-type: none"> <li>1 Create a New Zealand webmap with Baseline map, e.g. OpenStreetMap</li> <li>2 Add the layers that can be toggled on and off, e.g.,               <ol style="list-style-type: none"> <li>a. NZ aerial imagery from LINZ</li> <li>b. Infrastructure – Street Address, Roads, Waterways, Railways, Powerlines, Metal Quarries, log export ports, wood processing locations</li> <li>c. Cadastral – property legal boundaries</li> </ol> </li> <li>3 Search for an address and zoom to it</li> <li>4 Select "Drawing" tool, and draw woodlot boundary – and save</li> <li>5 Select "Roading" Click to start drawing access road polyline manually.</li> <li>6 set one costing option from drop down list with "Trucking" or "Forwarder"</li> <li>7 Highlight road slope (in different colours) that exceed tables of slope maximum criteria, e.g. <math>&lt; \text{ or } = 7</math> degrees for "Trucking"</li> <li>8 Click on road line and move to improve location or slope and recalculate slope/costs by manually clicking calculate button.</li> <li>9 Select "Skid location" tool – a point drawing tool</li> <li>10 Click center point of skid with point drawing tool</li> <li>11 Show skid outline on map to scale – e.g. 50m x 50m</li> <li>12 Hard coded 50m buffer from point, and then converted to square buffer only for visual display on map</li> <li>13 Select "Harvest Options" dropdown selection for Item 14</li> <li>14 Set access road level from drop down list provided. E.g. Forewarder, Truckr</li> <li>15 Select "Inputs", provide forms for users to input forest details, prices and costs in table format. Provide starting defaults from lookup tables.</li> <li>16 Implement simple cost algorithms such as:               <ol style="list-style-type: none"> <li>i. Harvest system costs calculated from variables derived/dropdown selection</li> <li>ii. Skid costs will be calculated based variables derived from map and look up tables provided.</li> </ol> </li> <li>17 Calculate final total woodlot harvest costs based on the inputs with a formula provided</li> <li>18 Show printable map (just basic print "what you see is what you print" as a png)</li> <li>19 Provide print function with results table with user enters reference name or address/identifier.</li> </ol>
<b>Version 2.0</b>	<ol style="list-style-type: none"> <li>1 Migrate to production server and set up</li> </ol>
<b>2021</b>	<ol style="list-style-type: none"> <li>2 Show woodlot ground slope as coloured map</li> <li>3 Enable multiple road lines to be tested in one session</li> <li>4 Enable multiple (woodlot) polygons to be digitised in same session</li> <li>5 Add layer (or access web service) for Erosion Susceptibility Classification- NES_FP</li> <li>6 Analysis of road line slope from elevation to improve accuracy</li> <li>7 Add new 5 species layers of productivity and use to estimate wood yield from Look up tables (two regimes and five stand ages)</li> <li>7b Add Carbon yields for Radiata pine from ETS Look up Tables by region</li> <li>8 Show all powerlines (currently have 110kv Transmission) data from LINZ or other data sources</li> </ol>

- 9 Develop prototype afforestation addition to interface called "Tree Planting"
- 10 Develop User Manual document
- 11 Develop Tutorial video

**Version 3.0****2022**

- 1 Extend functionality of drawing Access road polyline by allowing branch roads to be attached to existing roads
- 2 Project management: End User can then name 'Project' and "Save"  
The following data will be saved
  - Area of interest "Polygon", Road "Lines". Skid "Points"
  - Data will be saved into the End Users local PC file system
  - Project details
  - Input criteria
- 3 Set up and manage "User Group"
- 4 Update User Manual and Tutorial video
- 5 Add Wind Risk modelling and layer with appropriate caveats - ex L. Dowling

**Version 4.0****2023**

- 1 Add new productivity layers ( Coast Redwood, C. lusitanica, C. macrocarpa, ex Scion via Coordinates) to the database add to interface, provide colour coding by category, add legend, connect to the analysis and reporting
- 2 Update tables for standing wood yields by tree age and productivity level for Radiata pine, Coast Redwood, C. lusitanica, C. macrocarpa
- 3 Extend carbon accounting results in the report, to show results for Averaging or Permanent accounting methods  
For seven exotic species and two native forest options (plantation or regeneration) convert standing volume to merchantable volume and then into log grade volumes, implement log price adjustment by log grade. Add adjustment factor to convert radiata harvest costs to other species, calculate gross timber revenues, total costs of harvest, and net returns at harvest. Express as dollars per ha and average annual return/ha.
- 5 Add native forest (plantation or regeneration) costs of afforestation, and updated carbon yields
- 6 Highlight mapping of whole property or title - amalgamate parcels and show total property and woodlot/s location in the Output Report
- 7 Add three fire risk layers by climate change scenario
- 8 Improve a number of minor interface issues and labels
- 9 Implement updated User manual and video tutorial