

Attachment 2 – Flora and Fauna Survey



total earth care

17 February 2014

Joe Vertel
Senior Planning Advisor
Mosman Municipal Council

Re: Update Flora and Fauna Survey for Unmade Stanton and Fairfax Road Reserves

Mr Vertel,

Total Earth Care Pty Ltd (TEC) have been engaged by Mosman Municipal Council to update the Mosman Flora and Fauna Survey 2006 prepared by Total Earth Care. Specifically Council has requested an update of the information relating to the unmade section of Stanton and Fairfax Road Reserves (the 'subject site'), adjacent to Wy-ar-gine Point Reserve.

In following on from a Land and Environment Court case (Blakeney v Mosman Council 2013) decision, where an application for construction of a vehicle access driveway along the unformed sections of Stanton and Fairfax Road was dismissed by the Court, Council has resolved to propose the rezoning of the Lots from RE1 – Public Recreation to E2 – Environmental Conservation.

Within the Mosman Local Environment Plan 2012, under the site's current zoning of RE1, the construction of roads is an activity permitted with consent, whereas only environmental facilities and environmental protection works are permitted activities/developments under the proposed E2 zoning.

Council are seeking a Report that assesses the current and future potential ecological values of the subject site, an assessment as to whether E2 is the most appropriate zoning for the area and to identify any appropriate zone boundaries.

This Report is to be added to the Mosman Flora and Fauna Survey 2006 (TEC 2006) and outlines the above requests for information.

On the 6th of February 2014 Total Earth Care Ecologist Callan Wharfe undertook a site visit to assess the subject site for the purpose listed above.

Current Ecological Condition of the Subject Site

In 2007 (*Draft Mosman Flora and Fauna Survey 2006*) Total Earth Care described the bushland supported by the unformed sections of Stanton and Fairfax Roads as a cosmopolitan plant community that occurs over the majority of the subject site from the edge of the made Stanton Road over the lower section of the east-west pathway of unmade Fairfax Road and across the drainage line.

The plant community is characterised by occasional regrowth native trees, planted non-locally endemic native tree species, planted locally endemic shrubs and groundcovers and exotic horticultural plantings in encroaching garden beds. Weed density is high in this plant community and herbaceous annual and perennial weeds are present in the groundcover stratum.

The overall conservation significance of the subject site has been assessed in the *Draft Mosman Flora and Fauna Survey 2006* (TEC, 2007) as low to moderate. This assessment is based on;

- The continuity of vegetation of the subject site with adjacent native plant communities of the upper northern section of unmade Stanton Road Reserve and native plant communities of Wy-ar-gine Point Reserve;
- The aggregate resilience of the plant communities mapped and assessed from the *Draft Mosman Flora and Fauna Survey 2006* (TEC, 2007) for the whole of Stanton and Fairfax Road reserves is low to moderate, but with potential to increase with appropriate management;
- Apart from some aquatic habitat provided from the stormwater drain, in isolation, the subject site has a low diversity of fauna habitat features. However in the context of a continuous natural area the subject site extends the fauna habitat values (including that for threatened species) of the adjoining Wy-ar-gine Reserve

Since 2007 a community bushcare group has undertaken restoration works within the subject site, as part of the works undertaken within the adjacent Reserve. Works have resulted in a reduction in exotic species across the subject site, from high in 2007, to their current low densities observed during the site inspection.

A small amount of revegetation work has also been undertaken in areas within the subject site resulting in the establishment of native groundcover species such as *Dianella caerulea* and *Microlaena stipoides*. Bush regeneration works have also resulted in the germination of native ferns and groundcover species from soil stored propagules previously suppressed by the exotic species across the site.

Fauna habitats at the subject site have not significantly improved since the 2007 assessment, as native groundcovers have not yet been established at a density to provide sheltering habitat for native reptiles, amphibians and mammals. The Gross Pollutant Trap installed at the stormwater inflow point at the end of Stanton Road is currently acting effectively to remove gross pollutants from the stormwater, helping to improve fauna habitat and water quality downstream.

The stormwater drainage line from Stanton Road currently supports a number of areas where water tolerant exotic species persist. None of the species present are considered particularly invasive or listed as Noxious under the Noxious Weeds Act 1999 for the Mosman LGA.

The drainage line into the subject site from the area adjacent to the end of the cul-de-sac off Burran Avenue also harbours exotic species, which are considered more invasive, specifically *Lantana camara* (Lantana), *Ipomoea indica* (Morning Glory) and *Anredera cordifolia* (Madeira Vine) all listed on the NW Act for the Mosman LGA.

The unmade road reserve is currently acting as a buffer zone between the adjacent weed infested private properties to the west and Wy-ar-gine Reserve to the east. Ecological health and conservation significance of the Reserve were considered high in 2007, and remain as such as a result of the assessment of the Reserve undertaken for the current investigation. Large areas of native species in all strata occur across the Reserve and resilience of the area is also considered high, with fauna habitats diverse and abundant.

TEC (2007) has described the bushland in Wy-ar-gine Reserve as a dry woodland form of Sydney Sandstone Gully Forest that is a structured native plant community and is characterised by remnant and regrowth native canopy. The midstorey, understorey and groundcover strata are well established with high native species richness. Percentage weed cover was generally low and limited to scattered occurrences of exotic annual herbs and perennial grasses in the groundcover stratum.

The overall conservation significance of the native plant communities at Wy-ar-gine Reserve were assessed in the *Draft Mosman Flora and Fauna Survey 2006* (TEC 2007) as high. This assessment is based on;

- The Reserve supporting a population of the TSC Act and EPBC Act endangered plant species *Acacia terminalis* ssp *terminalis* Sunshine Wattle.
- The presence of a native plant community with a floristic composition and structure that is very limited in the LGA;
- A moderate diversity of fauna habitat features and recognition of the very limited transitional marine/terrestrial habitat resources for natural areas within the LGA;

- Potential habitat for threatened fauna known from the LGA;

Potential Future Ecological Condition of the Subject Site

Since 2007 vegetation mapping for the Reserve has been updated by DECCW with The Native Vegetation Mapping of the Sydney Metropolitan Catchment Management Authority Area (DECCW 2009). The vegetation communities mapped within Wy-ar-gine Reserve and the Unmade Road Reserve are now mapped as Coastal Enriched Sandstone Moist Forest and Coastal Sandstone Foreshore Forest. These communities broadly conform to TEC's 2007 assessment of the vegetation as dry woodland form of Sydney Sandstone Gully Forest, and do not lower the conservation significance outlined above.

A number of flora species occurring as regenerating seedlings and remnant/regrowth established plants within the Unmade Road Reserve and immediately adjacent (within 2m of the Lot boundary) in the Reserve's contiguous bushland vegetation are listed as characteristic species on these communities. These include *Acacia implexa*, *Angophora costata*, *Blechnum cartilagineum*, *Calochlaena dubia*, *Commelina cyanea*, *Dianella caerulea*, *Eucalypt botryoides*, *Ficus rubiginosa*, *Homalanthus populifolius*, *Imperata cylindrical*, *Livistona australis*, *Lomandra longifolia*, *Miroslana stipoides*, *Oplismenus aemulus*, *Pittosperum revolutum* and *Pittosperum undulatum*.

A number of these species have regenerated from soil stored propagules, facilitated by the bush regeneration works undertaken within the subject site. This illustrates the resilience of the site is moderate and is likely to improve with on-going weed control and revegetation works.

A Vegetation Management Plan (VMP) exists for Wy-ar-gine Reserve which includes the subject site within its scope of works, specifically as Management Zones 8, 9, 10 and 11. The VMP outlines weed control and revegetation recommendations within each zone and timing to undertake the works. The proposed driveway would have been constructed within Zones 10 and 11 and the VMP acknowledges this, and states that works within these zones should not be undertaken until the future of the land's tenure has been decided. This point is also noted in the Planning Controls Section of the Land and Environment Court Judgement (Blakeney v Mosman Council 2013).

The Judgement also states that the current degraded state of the land within the subject site is, at least in part, a consequence of years of indecision as to the fate of the land and the proposed driveway.

Following the Land and Environment Court's decision, and if Council's proposed zoning change goes ahead, the future of the Lot will be secure and further vegetation management actions can be implemented under the VMP. With an increase in works across the subject site it is likely that further native species will regenerate from seed, seedlings will become established and natural regeneration will be augmented with revegetation. All of which will improve the ecological health of the site.

An increase in native vegetation will lead to improvements in fauna habitats both within the wet drainage line and the surrounding terrestrial area. Dense native understorey vegetation within Wy-ar-gine Reserve provides habitats for native mammals, reptiles and passerine birds, which will be increased as a result of continued and amplified bush regeneration work in the subject site.

Zones 8 and 9 outlined in the VMP encompass the degraded drainage line that enters the subject site from Burran Avenue. As stated above this area supports noxious weed species, but native species regeneration is also evident with *Acacia implexa* and *Homalanthus populifolius* observed during the current investigation. Should future restoration works be undertaken, the drainage line and the condition of the surrounding vegetation would be enhanced, thereby improving the quality of stormwater entering the site, the fauna habitat in and around the drainage line, and the aesthetic values within the Reserve and Burran Avenue.

Appropriateness of E2 Zoning

The Mosman Local Environment Plan 2012 outlines the objectives of land zoned E2 – Environmental Conservation as follows;

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.
- To conserve native plant and animal species through the maintenance of suitable habitats.
- To contribute to the scenic quality of Mosman and Sydney Harbour.

In zoning the subject site E2 – Environmental Conservation it is likely that further vegetation management works will be undertaken which will inherently protect manage and restore the area and its ecological and aesthetic values. Future development would be prevented, native flora and fauna and their habitats supported by the subject site and the adjacent Reserve would be conserved and the scenic quality of the area will be enhanced.

The zoning of the site E1 – National Parks and Nature Reserves is inappropriate due to the zone's objectives for the area requiring it to be listed on the National Parks and Wildlife Act 1974, which also is inappropriate.

Retaining the site's current zoning of RE1 – Public Recreation is not the desirable outcome for Council, and would perpetuate the potential for future development applications. It would also likely result in a lack of future restoration works and the potential improvements in ecological and aesthetic values of the area would remain un-realised.

RE1 – Private Recreation and all other zoning options are also considered inappropriate considering the desire for non-development of the site, and the potential future improvements in the area's natural values.

Within TEC's 2007 report it was stated that the vegetation on the unformed sections of Stanton and Fairfax Roads are considered to be 'bushland' under *State Environmental Planning Policy No 19 - Bushland in Urban Areas* (SEPP 19).

The current assessment agrees with the above conclusion and hence a comparison between the objectives of SEPP 19 and MLEP Zone E2 are considered appropriate.

E2 – Environmental Conservation and SEPP 19 Bushland in Urban Areas have similar objectives, those relevant to the current assessment being;

- To protect and preserve bushland within the urban areas referred to in Schedule 1 (under which Mosman is listed) because of its value to the community as part of the natural heritage, its aesthetic value, and its value as a recreational, educational and scientific resource,
- To protect the remnants of plant communities which were once characteristic of land now within an urban area,
- To protect habitats for native flora and fauna,
- To protect bushland as a natural stabiliser of the soil surface, and
- To promote the management of bushland in a manner which protects and enhances the quality of the bushland and facilitates public enjoyment of the bushland compatible with its conservation.

Due to the reasons outlined above it is the conclusion of this assessment that E2 – Environmental Conservation is the most appropriate zoning for the subject site.

Zone Boundaries and Map

Suggested boundaries for the rezoning proposal are outlined on the map below and should encompass the Stanton Road Reserve from the end of Stanton Road, in a north-easterly direction to the point where the drainage line meets the turfed area adjacent to the end of the cul-de-sac off Burran Avenue.

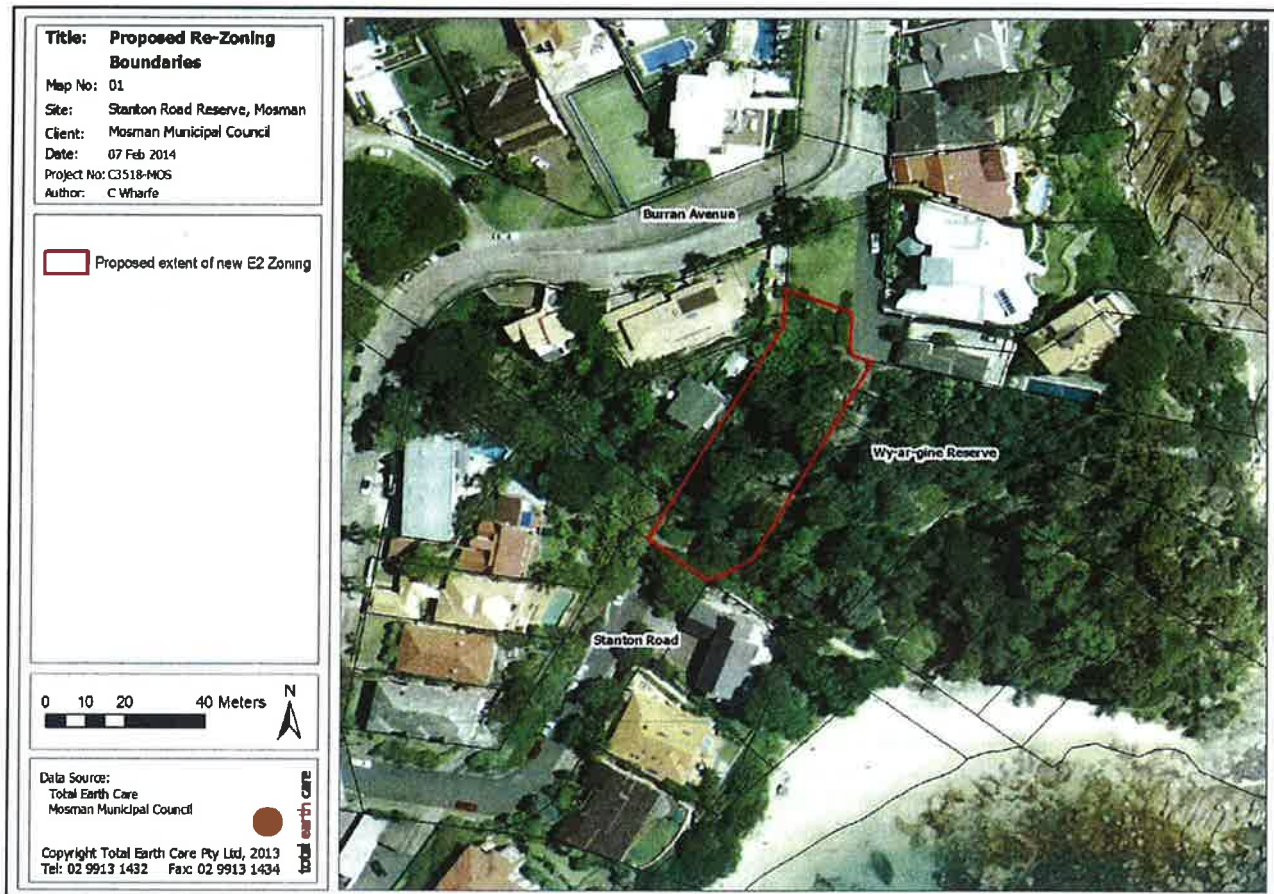




Figure 1 - View of the subject site from Stanton Road



Figure 4 - Native (local and non-local) species within the subject site



Figure 2 - GPT off Stanton Road



Figure 5 - Weed infested private property adjacent to relatively weed free subject site



Figure 3 - Bushcare works area within the subject site



Figure 6 - Regenerating native *Oplismenus aemulus*



Figure 7 - Regenerating native fern *Blechnum cartilagineum*



Figure 10 - Regenerating native groundcover *Tetragonia tetragonoides*



Figure 8 - Regenerating native fern *Calochlaena dubia*



Figure 11 - Planted *Dianella caerulea* adjacent to degraded drainage line



Figure 9 - Dense native groundcovers immediately adjacent to the subject site



Figure 12 - Dense native ground covers within Wy-argine Reserve



Figure 13 - Degraded drainage line from Burran Ave, with native palms *Livistona australis*



Figure 14 - Dense exotic species at the top of the degraded drainage line

Figure 15 - Proposed extent of E2 Zoning, drainage line / Turfed area boundary adjacent to Burran Ave

If you have any questions or comments in regards to the above assessment and information contained within please feel free to contact me.

Yours sincerely,

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Attachment 3 – Copy of Court Judgment
