Submission No 244

INQUIRY INTO PLANNING SYSTEM AND THE IMPACTS OF CLIMATE CHANGE ON THE ENVIRONMENT AND COMMUNITIES

Organisation: Save Westleigh Park

Date Received: 14 May 2024

Portfolio Committee no. 7 – NSW Planning and Environment inquiry

Planning system and the impacts of climate change on the environment and communities

Westleigh Park site visit 10.05.24 – Submission – supporting evidence is in Appendices 1-3

Westleigh Park development is the embodiment of what is wrong with planning system.

If there were more effective controls in place there would be fewer delays in delivering housing and infrastructure and less problems with poor amenity and outcomes.

1. UNDER FUNDED PROJECTS ONLY PARTIALLY COMPLETED

- Westleigh Park project cost was last year estimated to be over $80M.
- Grant of $40M provided in 2018, funding had to be fully spent by 2022 or returned to govt
- Not a sod of earth has been turned, but no money has been returned to the state.
- No source for the **$40M balance of funding required** has been identified, 2nd & 3rd ovals likely won't be built for *"a generation"* (quote from Hornsby Council General Manager).
- Interest on balance supposed to be added to grant, allegedly moved to general revenue.
- Under the same grant, Council was provided with $50M for Hornsby Quarry Park in 2018. The $50M has already been spent on remediation with none of that spent on park facilities
- Hornsby Quarry Park project cost was last year estimated to be over $120M, ie as at today's date it's **$70M underfunded** with no source of funding identified.
- Last year, Council approved spending $20M of Developer Contributions in this year on half of the planned skyway over the park, so residents can see the works being done.
- That's $20M less spent on other Council infrastructure that is desperately needed eg, footpaths, parks, other sporting and community facilities, libraries, public toilets, etc.
- Yet at the May 2024 Council meeting the General Manager stated *"There is absolutely no capacity to add new projects for 2023/2024. You adopted a report tonight which told you about the fact that we are delivering a record capital works program at the moment and we've just had to reduce the full extent of the program that we're attempting to deliver because i**t's frankly just a little too ambitious for us to be able to cope with**. So there's no capacity"*.
- The two Park projects that were only partially funded by the State Government, **Westleigh and Hornsby Quarry Parks, are currently and will continue to put enormous budgetary pressure on Hornsby Council** to the detriment of other amenities.

2. ASBESTOS CONTAMINATION NOT PROPERLY REMEDIATED

- Site is heavily contaminated with asbestos, coal tar, PFAS, heavy metals and putrescibles.
- When site was purchased, estimated cost of remediation was $20M.
- $40M funding is insufficient to complete proposed Stage 1 works plus all remediation.
- Contaminated soil is to be dug up, relocated onsite to create a level platform 8.5m high.
- 2nd and 3rd ovals (Stage 2) are to be excavated for contaminated fill for 1st oval (Stage 1).
- Stage 2 ovals will not be capped with impermeable material in Stage 1, simply fenced off.
- EPA auditor and consultants state contamination must be capped and contained.
- Children will access the asbestos contaminated Stage 2 area by cutting through the fence, just as they had done at the gate entrance the Committee climbed through at the site visit.
- Council also allows mountain bikers to ride in forest even though asbestos is widespread.
- **Proper remediation of onsite contamination must be the overriding priority for the health and safety of the community and sports people.**

3. THREATENED SPECIES AND ECOLOGICAL COMMUNITIES PUT AT RISK

- **Bushwalking will be prohibited** in whole forested area, mountain bikes only allowed.
- Critically endangered forest is being fragmented by multiple mountain bike tracks.
- A new bike track is to be built within the critically endangered ecological community. This has not been permitted anywhere before and sets a new precedent for building in CEEC.
- Understorey damage will lead to downgrading of vegetation classification, as raised by Council staff in project documentation.
- It is proposed that mountain bike volunteers do trail and vegetation maintenance in CEEC.
- Area is not large enough to be protected at federal level, even though the Commonwealth Approved Conservation Advice for this forest type specifically recommends restricting access by mountain bikes to the critically endangered forest (Appendix 2).
- The Hornsby Council Report on Environmental Factors (REF) stated ***"The proposal will have a significant impact on the environment and should not proceed".*** **Councils should not be allowed cherry pick what advice it takes.**
- **Cumulative impacts on CEECs, of hundreds of small developments, is not being considered. Instead each project is being considered individually which is leading to increased risk of extinctions.**

4. PROPONENT-ENGAGED CONSULTANTS PROVIDE MISLEADING REPORTS

- Proponents choose which consultants do their reports.
- Consultants write reports that favour the proponent or they don't get future work.
- Penalties are not imposed for wrong information provided by consultants in reports.
- Land and Environment Court has determined that a proponent doesn't necessarily have responsibility to query whether information is correct or wrong.
- Consultants need to be selected by independent entity on a rotation basis to avoid bias.
- In the case of Westleigh, a consultant's determination of whether a large area was a critically endangered ecological community (Duffys Forest) was based on just one 20m x 20m plot of vegetation. The Biodiversity Development Assessment Report stated that "***The full vegetation integrity plots were not completed in the development footprint*** *due to the impracticalities of the design and shape of the footprint.* ***Plots were positioned as close as possible to existing trails****. The vegetation along the edges of each trail was consistent with the broader vegetation zone with no substantial changes in composition, condition or cover of exotic species".*
- One plot for the whole area is inconsistent with the Biodiversity Assessment Method; the design and shape of the footprint is irrelevant to this Method; the single plot should not have been positioned close to the existing trails because "edge effects" cause changes to species composition thus the composition is different across the broader vegetation zone.
- Furthermore, the BDAR failed to acknowledge that the same consultant had provided a Report in 2020 stating that the vegetation was consistent with Duffys Forest and that Council staff had stated in their own report that it is Duffys Forest ecological community.
- The community has little if any faith in the information provided in proponent-engaged consultants' reports. It is disputes arising from conflicting or misleading information that are more often than not the basis of what are described as "NIMBY" objections.
- **If consultants were selected on a rotation basis to provide reports, there would be no cause for bias, perceived or actual, and developments would proceed much quicker, with far fewer objections and much better outcomes overall.**

5. ABORIGINAL HERITAGE IGNORED

- At Westleigh Park a Scar tree is being removed and a rock shelter will be *"under a portion of the proposed bike track"* (Aboriginal Test Investigation Report 2023).
- The Registered Aboriginal Parties (RAPs) were opposed to the relocation of the Scar tree.
- The Aboriginal Cultural Heritage Assessment Report 2023 stated:

  "The Westleigh Scarred Tree is of very high cultural significance to the Aboriginal community"
  "The tree is extremely rare as one of the few remaining intact scarred trees in the HSC LGA"
  "The RAPs are opposed to the relocation of the tree from its current location".
  "The level of expected harm to this site from the proposed works is considered a threat of serious or irreversible harm which would result in the total loss of associated Aboriginal cultural values".

- Council report simply said that they had liaised with the RAPs and Council would be relocating the Scar tree ie Council ignored the voice of the Registered Aboriginal Parties.
- No professional survey has been done of the rock shelter and its artefacts.
- The RAPs view the rock shelter within its landscape context and therefore as being part of the cultural landscape. Yet mountain bike tracks are being sanctioned through that area.
- **There should be more respect shown for Aboriginal heritage, culture and landscape context, not simply allowing proponents to pay lip service to First Nations views.**

6. SYNTHETIC TURF POLLUTION

- Pollution from microplastics, fungicides, cleaning agents and chemicals are a significant concern with synthetic turf. The NSW Draft Synthetic Turf Guidelines state *"Pollution, particularly of waterways and bushland, is a key concern"* and *"pesticides and fungicides are typically required for synthetic fields".*
- Westleigh Park is on a ridgeline so any contamination will flow downhill into the surrounding waterways and the immediately adjacent critically endangered bushland.
- Even if cork is used, in high rainfall events it floats away. Cork is also treated with chemicals and it breaks down over time.
- Surface runoff is exacerbated because contaminated soil underneath should be capped.
- A stormwater detention pond which will collect and concentrate the stormwater from both the synthetic turf and contaminated fill, will be built within the critically endangered forest.
- The NSW Chief Scientist Report notes the following on leachates: *"Periodic intense rain and flood conditions in Australia can overwhelm drainage systems and wash away leachates and microplastics in larger quantities. These conditions are expected to become more frequent and extreme under a changing climate".*

  https://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0004/542263/CSE-Synthetic-Turf-Review-Final-Report.pdf

  https://www.abc.net.au/listen/programs/sydney-mornings/synthetic-grass/103600142

  https://media.streem.com.au/preview/RAynYBrr9cx0uyjz29q?keywords%5B %5D=synthetic+turf

- **Synthetic turf should not be used adjacent to critically endangered ecological communities or in other sensitive environments because there are significant concerns surrounding pollution.**

7. BUSHFIRE IS A SIGNIFICANT RISK

- Westleigh Park is on bushfire prone land yet synthetic turf fields are proposed.
- The NSW Draft Synthetic Turf Guidelines state that **synthetic turf is *"easily flammable and can be ignited in bushfire settings"*** and *"they may cause additional risks due to toxic gasses and noxious emissions being released once ignited".*
- The Draft Guidelines further state that *"Synthetic turf…should be reconsidered in bushfire prone areas".*
- The NSW Chief Scientist Report stated "***synthetic turf fields are not* (to be) *approved in areas of high environmental risk. This includes bushfire prone areas***".
- Despite the NSW Government experts issuing these red-flag warnings over the use of synthetic turf on sites such as this, Hornsby Shire Council is stubbornly proceeding with the use of synthetic turf for Westleigh Park on the edge of Berowra Valley National Park.
- **Synthetic turf should not be used on bushfire prone land, where it is a health and safety risk to residents, sports people and firefighters.**

8. STORMWATER RUNOFF SUBSTANTIALLY INCREASED

- The Referral Water Management Report states that *"Due to the change in impervious area the flows in the catchment change substantially from pre-development to post development".*
- The surface runoff will increase from 11ML/yr to 61/ML/yr and the runoff days will increase from 5 days to a whopping 98 days.
- These figures do not take into account climate change which will further distort the amount of runoff on the site from pre-development to post development.
- This additional runoff will be channelled into the adjacent critically endangered forest, which is sensitive to hydrological changes, and into surrounding waterways.
- **Stormwater runoff and impacts must be better managed given the significant impacts to the sensitive landscapes and the expected impacts of climate change.**

9. LOW AND MID-RISE HOUSING SCHEME: ONE SIZE DOESN'T FIT ALL AT WESTLEIGH BECAUSE OF BUSHFIRE RISK

- According to the Planning NSW website, these reforms will allow dual occupancies (two separate homes on a single lot), such as duplexes, in all R2 low density residential zones across all of NSW and allow terraces, townhouses and 2 storey apartment blocks near train stations and key town centres in R2 low density residential zones across the Greater Sydney region. Many of these will be built under a Complying Development Certificate.
- The majority of the suburb of Westleigh is serviced by one road in and out, Quarter Sessions Road. There have been significant concerns raised by the RFS and residents that in the event of a bushfire, Quarter Sessions Rd will not have insufficient capacity to evacuate residents and allow firefighting vehicles in to get to the fire front. A combination of dual occupancies together with mid-rise housing within 800m of the Westleigh Shopping Centre, has the potential to more than double the population of Westleigh.
- An extension to Sefton Road has been proposed to cater for the regional sporting complex at Westleigh Park. However this is to be closed to through traffic when there are no sporting events except in the case of an emergency. No evacuation traffic studies have been undertaken based on doubling the population surrounding the Park.

- It is unlikely that the road extension would have the capacity to cope with double the number of additional residents fleeing a bushfire, particularly during a sporting event.
- Bushfire prone land maps only show properties that are adjacent or close to at risk bushland, not houses that would be impacted by evacuation.
- Without the oversight of local council planning, the low and mid-rise housing reform risks disastrous outcomes in bushfire prone suburbs, particularly where there is limited road access such as Westleigh.
- This is a significant issue in many suburbs that are surrounded by bushland, particularly those with shopping centres. Other northern suburbs that will be similarly impacted include Mt Kuring gai, Berowra Heights and Brooklyn.
- **The RFS has prohibited medium density housing in those suburbs which are north of Asquith for the precise reason that a substantial increase in residents could not be evacuated in case of a large bushfire. Yet the State Government has ignored the RFS by implementing this scheme in all R2 zones and near shopping centres.**
- **THE LOW AND MID RISE HOUSING SCHEME PUTS LIVES AND PROPERTY AT RISK OF DEADLY BUSHFIRES.**

- Furthermore the Low and Mid Rise Housing Scheme, while increasing housing stock, will do little to reduce the cost of housing. It is more likely that the following will occur:
  * Where housing stock is 50 years+ it is the value of the land that makes up the largest proportion of the cost.
  * When the house is sold, if two houses can be built on the same block of land, then the property is more valuable as a knock-down-rebuild than as a single home.
  * If four dwellings can be built as a manor house, it is more valuable again.
  * Each of these two or four dwellings are often sold at almost the same price as the old-stock original house.
  * Thus it is more likely that the original property will be purchased at a higher price by a developer than it would sell for as a single old-stock home.
  * This situation pushes the price of housing stock even higher, locking first home buyers and families out of that market.

The Low and Mid Rise Housing Scheme, while increasing housing stock, will do little to reduce the cost of housing. If anything, it will increase existing house prices

10. TRAFFIC CONGESTION

- There is a significant increase in traffic volumes predicted as a result of the Regional Sporting Complex and Westleigh Park. The intersections of Duffy Avenue with both Quarter Sessions Road and Sefton Road are already at near capacity during peak periods.
- If a doubling of population from the Low and Mid Rise Housing Scheme occurs, the wait times at these and other local intersections is likely to become untenable. A further truck container interchange is being built on Duffy Ave between Quarter Sessions Road and Sefton Road, a storage centre is being constructed within 200m of the Duffy Ave/Sefton Rd intersection, and a recycling centre is within 100m of that intersection.
- In the meantime, all Westleigh Park construction trucks and traffic will use the Quarter Sessions Road entry to the site, exiting the area through the Duffy Road intersection.
- **Doubling the local population by a state-mandated planning control that does not take into account local conditions and amenity, is not good planning.**

11. IMPACT ON CRITICAL INFRASTRUCTURE – THORNLEIGH RESERVOIR

- The Sefton Road extension is to be constructed on Sydney Water land which contains the Thornleigh Reservoir. Sydney Water deems the Reservoir to be critical infrastructure. Council's proposal is for a two-way sealed road which requires excavation of the dam wall on the south side of the Reservoir.
- A Public Works Advisory Assessment stated *"It is estimated that Thornleigh Reservoir has a HIGH consequence category associated with it in view of the close proximity of houses, particularly at the southern end"*, where the embankment excavation is proposed.
- Sydney Water's engineers have expressed concerns regarding impacts on the dam with Sydney Water internal correspondence saying that **the proposed access road "*would impact on the integrity of the dam*** *... which is one of the most critical reservoirs in our water network".*
- **Sydney Water critical infrastructure should not be put at risk.**

12. ADDITIONAL ISSUE

- Use of synthetic turf on the playing fields will result in loss of informal recreation and sporting areas. Combined with the loss of the forested half of the site to mountain bike use, Westleigh Park will become the domain of less than a handful of sports, being soccer, mountain bikes and athletics, to the detriment of the rest of the community.
- **Councils should not dedicate large recreation areas to just three or four sports, while excluding all other residents, particularly when more and more families are living in apartments with no recreation area.**

CONCLUSION

The examples from the Westleigh Park project described above and in attached Appendix 1, are indicative of the significant issues with the current NSW planning system. While these problems remain unresolved projects will continue to be delayed, the outcomes sub-optimal and the community distrustful of developers and government. It is incumbent on Members of Parliament to satisfactorily address these serious issues to ensure the NSW planning system is fit for purpose.

Without prejudice: we wish to make clear that any and all statements made in this submission in no way suggests or infers that any person, business or organisation has done or intends to do anything untoward or illegal.

Portfolio Committee no. 7 – Planning and Environment inquiry

Planning system and the impacts of climate change on the environment and communities

Westleigh Park site visit 10.05.24 - **APPENDIX 1 – Supporting Information**

1. UNDER FUNDED PROJECTS ONLY PARTIALLY COMPLETED

Grant document excerpt -

4. How Council must deal with the Grant Funding

4.1 **Use of Funding:** Council must:

(a) use the Funding solely for the purposes set out in the Grant Form and as authorised by the relevant Guidelines,

(b) only use the Funding within the Funding Period,

(c) not enter into any arrangements or commitments in relation to the Grant Funding that are incompatible or inconsistent with the relevant Guidelines, and

(d) fully acquit the funding by 30 June 2022.

4.2 **Unspent Funding:**

(a) Any unspent or uncommitted funds held by Council at 31 December 2022 must be returned to OLG by 31 March 2023,

2. ASBESTOS CONTAMINATION NOT PROPERLY REMEDIATED

What is supposed to be used -

Table 6.1 Capping Profile

Layer (top to bottom)	Function	Alternatives
Vegetation layer (shallow rooted vegetation only, eg grassed lawn): 200mm of topsoil	• Support plant growth and reduce surface erosion	• Synthetic surfaces • Pavements • Thicker topsoil/growing media for deeper rooted vegetation
Drainage layer: 300mm of granular material (k=>10^{-3}m/s) with a suitable gradient >2% on the base	• Promote stormwater runoff and reduce water ponding on the top of the cap	• Synthetic drainage network • Integrated subsoil drainage network in the vegetation layer • Improved surface/cap gradient • Low permeability pavements
Clay sealing layer: 500mm of compacted clay (k=<10^{-8}m/s)	• Present a physical barrier between contaminated materials and receptors • Limit infiltration of stormwater into the contaminated materials	• Synthetic or composite liners • Pavements
Marker layer: Non-woven high visibility geotextile	• Reduce accidental penetration into underlying contaminated materials • Act as a warning layer to indicate contaminated materials are present underneath the layer	• Warning signage on surface

3. THREATENED SPECIES AND ECOLOGICAL COMMUNITIES PUT AT RISK

Westleigh Park damage by mountain bikers -

4. PROPONENT-ENGAGED CONSULTANTS PROVIDE MISLEADING REPORTS

Excerpt from Biodiversity Development Assessment Report -

> and meander throughout the subject land. The full vegetation integrity plots were not completed in the development footprint due to the impracticalities of the design and shape of the footprint. Plots were positioned as close as possible to existing trails. The vegetation along the edges of each trail was consistent with the broader vegetation zone with no substantial changes in composition, condition or cover of exotic species.

Same company, conflicting reports -

The area of vegetation immediately east and adjacent to the Sydney Turpentine-Ironbark Forest, has been variously described as the following. Duffys Forest is a critically endangered ecological community (CEEC); neither Bloodwood-Scribbly Gum Woodland nor Coastal Shale-Sandstone Forest are CEECs.

2017 - Hornsby Shire Council - Duffys Forest
2018 - Eco Logical Aust (Council consultant) - Bloodwood-Scribbly Gum Woodland
2020 - Eco Logical Aust (Council consultant) - Duffys Forest
2023 - Eco Logical Aust (Council consultant) - Coastal Shale-Sandstone Forest

5. ABORIGINAL HERITAGE IGNORED

Aboriginal Test Investigation Report 2023

- The Westleigh Scarred Tree is of very high cultural significance to the Aboriginal community.
- The tree is extremely rare as one of the few remaining intact scarred trees in the HSC LGA.
- The RAPs are opposed to the relocation of the tree from its current location.

The landscape associated with the rockshelter and gully is significant in that it is the only landscape component that retains relatively intact archaeological signatures and natural landscape features. It is the only part of the study area that has a wider landscape context and incorporates a cross section of landforms that provide a window into the pre-1788 landscape. For these reasons this landscape 'component' should be managed as part of the rockshelters archaeological (and with respect, cultural) landscape.

6. SYNTHETIC TURF POLLUTION

NSW Synthetic Turf Draft Guidelines -

Pollution: Air and water pollution caused by synthetic turf materials (i.e. rubber crumb) is well documented in academic research. Pollution, particularly of waterways and bushland, is a key concern.

Chemical use: Pesticides and fertilisers are typically used for natural turf fields, while pesticides and fungicides are typically required for synthetic fields.

7. BUSHFIRE IS A SIGNIFICANT RISK

NSW Synthetic Turf Draft Guidelines -

Bushfire

Polymers used in synthetic turf are classified as easily flammable and can be ignited in bushfire settings. They may cause additional risks due to toxic gasses and noxious emissions being released once ignited.

There are currently no ignition or fire testing standards for outdoor synthetic turf experiencing bushfire wind and temperature conditions. Synthetic turf, especially those consisting of crumb rubber in-fill, should be reconsidered in bushfire prone areas.

NSW Chief Scientist's Report -

Flood and fire risk	
R1.4	Risk assessments are undertaken, and synthetic turf fields are not approved in areas of high environmental risk. This includes bushfire prone areas and areas with a higher likelihood of flooding. Assessments and testing should be informed by relevant NSW Government emergency response agencies as well as independent expert advice, including advice contained in this report.

8. STORMWATER RUNOFF SUBSTANTIALLY INCREASED

Excerpt from Civil Stormwater Report 2023 -

4.2.1 PRE- AND POST-DEVELOPMENT FLOWS
Due to the change in impervious area the flows in the catchment change substantially from pre-development to post development as follows:

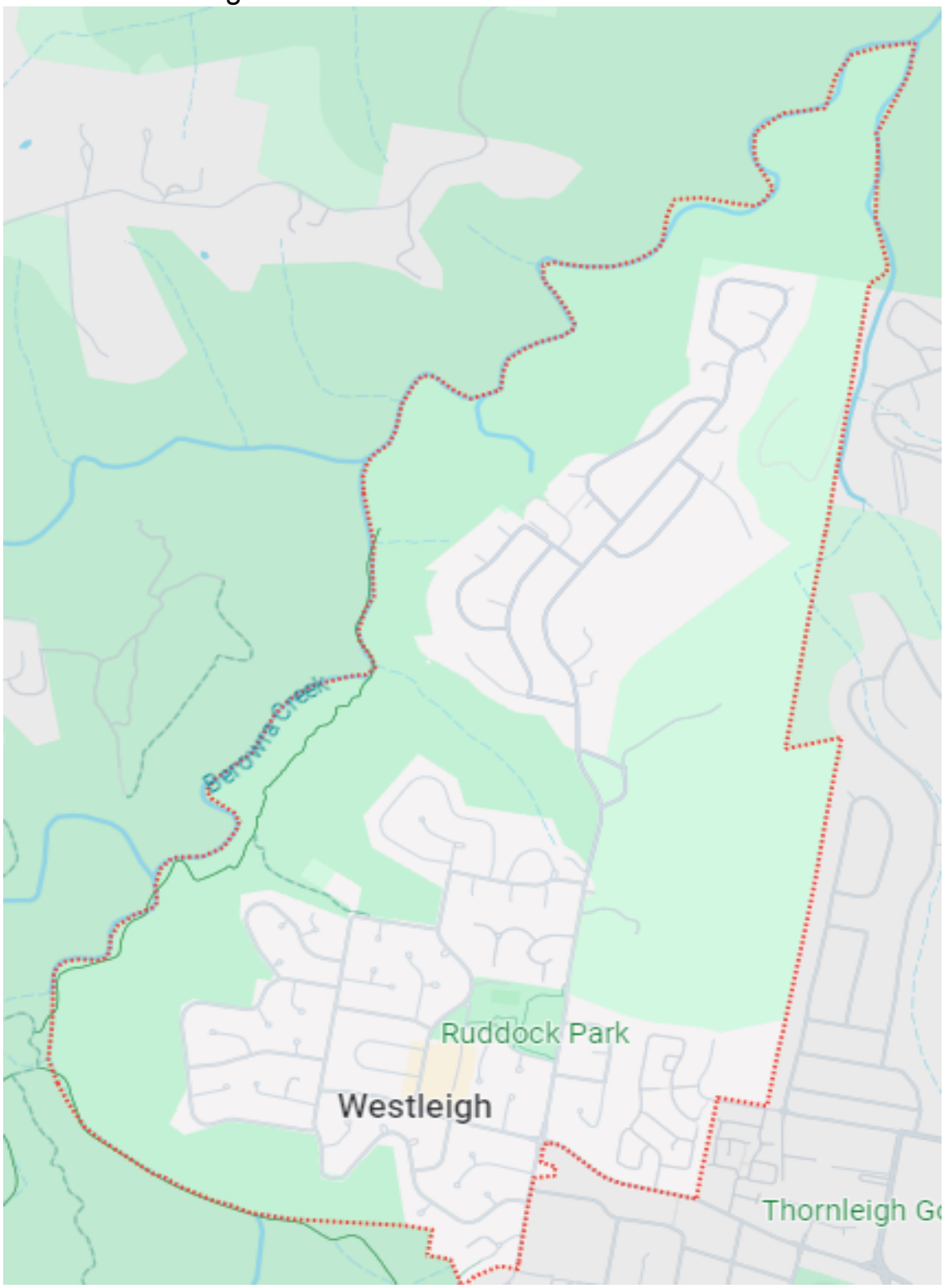
- Baseflows decrease from pre-development 27 ML/yr to 12 ML/yr
- Surface runoff increases from pre-development 11 ML/yr to 61 ML/yr
- Runoff days increase from 5 days to 98 days

9. **LOW AND MID-RISE HOUSING SCHEME:**

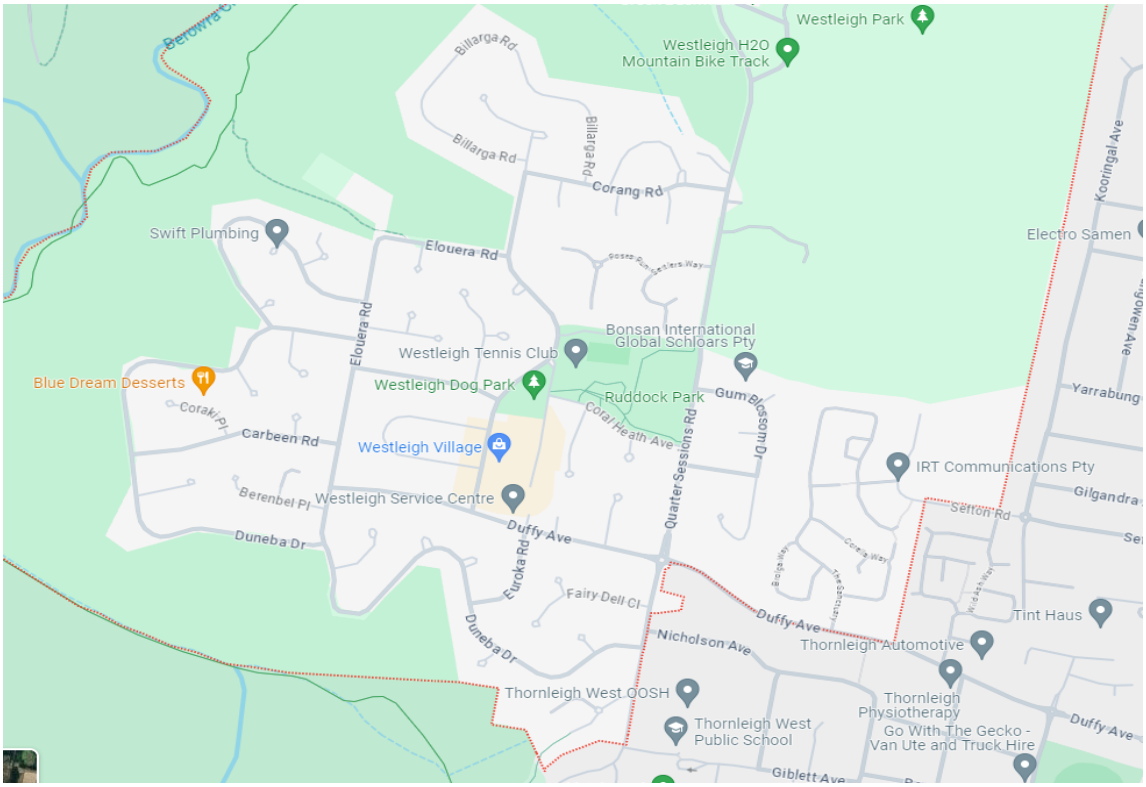
ONE SIZE DOESN'T FIT ALL AT WESTLEIGH BECAUSE OF BUSHFIRE RISK

Series of maps below show Westleigh's one road in, the position of Westleigh Shopping Village, and the 800m from the shops where mid rise housing will be permitted. Residents will not be able to be evacuated in the event of a bushfire.

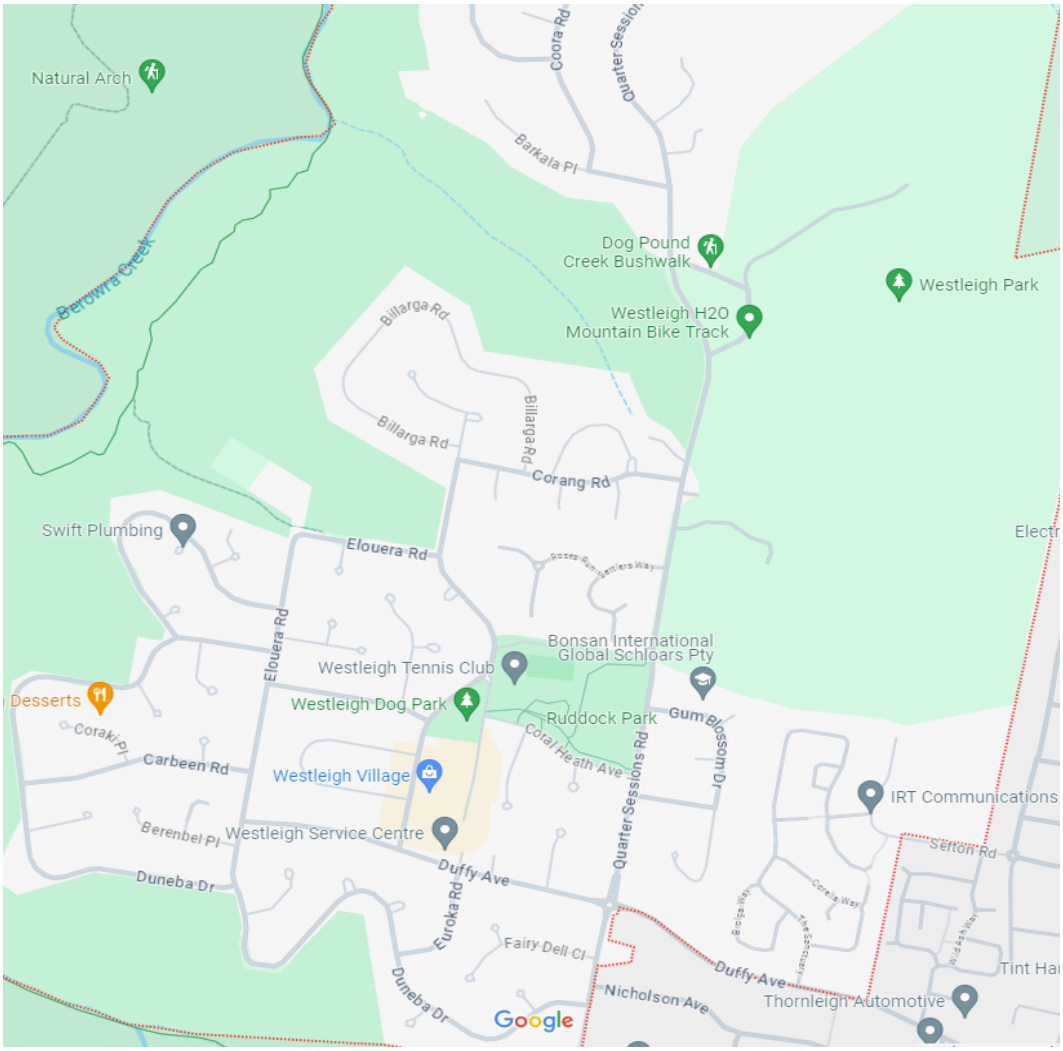
Whole of Westleigh suburb outlined in red -



One road in, Quarter Sessions Road, Westleigh -



Position of Westleigh Shopping Village



Distance of 800m from Westleigh Shopping Village, Mid Rise Housing applies

10. TRAFFIC CONGESTION

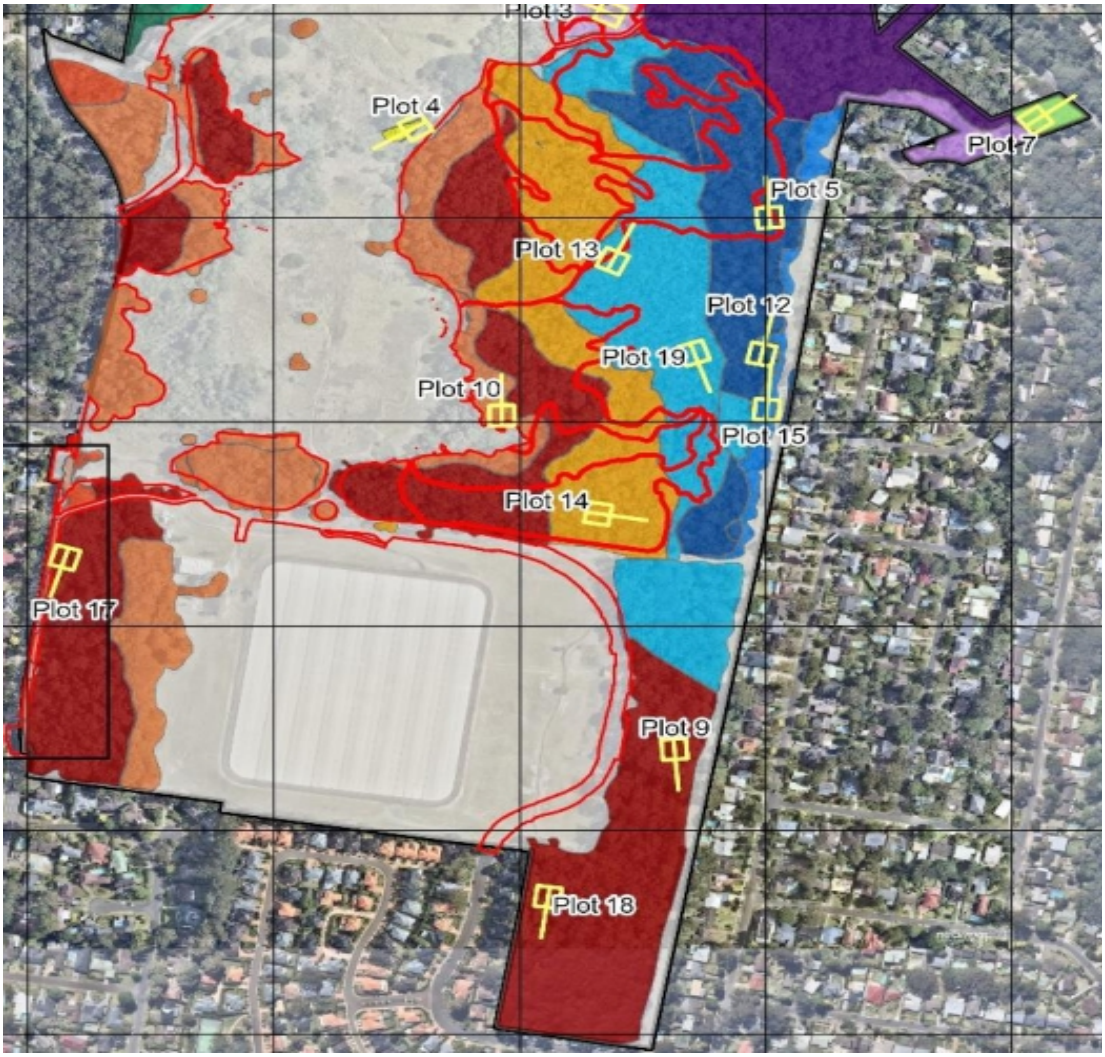
Excerpt from 2022 Traffic Report -

Summary of Key Conclusions

- The Duffy / Chilvers / The Esplanade intersection will see increased delays and should be upgraded
- In Stage 1, the Sefton Road Link (extension) is not essential to reduce other network congestion
- With Stage 2, the Sefton Road Link (extension) is required to provide an additional local alternative east-west traffic route to address traffic congestion

11. IMPACT ON CRITICAL INFRASTRUCTURE – THORNLEIGH RESERVOIR

Pair of red lines in the lower portion of the map show the proposed road through Sydney Water land. Where the road swings to the west at the bottom of the site, the dam wall must be excavated.



Approved Conservation Advice for Turpentine–Ironbark Forest in the Sydney Basin Bioregion

(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this ecological community.

Description

The **Turpentine–Ironbark Forest in the Sydney Basin Bioregion** ecological community is typically a type of open forest that is endemic to the Sydney Basin bioregion. The ecological community comprises a canopy of eucalypts and related trees that may reach a height of over 30 metres, above a midstorey of shrubs and small trees over a ground layer of herbs and grasses. Some patches may show a woodland structure in response to site condition and disturbance history.

The tree canopy of the **Turpentine–Ironbark Forest in the Sydney Basin Bioregion** is typically dominated to co-dominated by *Syncarpia glomulifera* (turpentine). Turpentine occurs throughout the ecological community but the associated tree species varies with local site conditions. Ironbark species are commonly present, such as *Eucalyptus paniculata* (grey ironbark), *E. crebra* (narrow-leaved ironbark) and/or *E. fibrosa* (red ironbark). On the Cumberland Plain, grey ironbark, narrow-leaved ironbark and red ironbark are common co-dominants, as is *E. punctata* (grey gum). On the plateaux shale caps, grey ironbark and *E. notabilis* (mountain mahogany) may become common in association with turpentine. At the upper end of its rainfall/elevation range the Turpentine–Ironbark Forest of the Sydney Basin Bioregion may be dominated to co-dominated by *E. saligna* (blue gum), *E. cypellocarpa* (mountain grey gum), *E. deanei* (round-leaved gum) or grey gum (NSW NPWS, 2002; Tozer, 2003).

A stratum of small trees may occur, including *Pittosporum undulatum* (sweet pittosporum), *Trema aspera* (native peach) and *Acacia parramattensis* (Parramatta wattle). Where present, a shrub layer may include *Polyscias sambucifolia* (elderberry panax), *Notelaea longifolia* (mock olive), *Leucopogon juniperinus* (prickly beard-heath), *Pittosporum revolutum* (rough-fruit pittosporum), *Breynia oblongifolia* (breynia), *Maytenus silvestris* (narrow-leaved orangebark) and *Ozothamnus diosmifolius* (white dogwood).

Where present in its natural state, the ground layer may include *Oplismenus aemulus* (basket grass), *Pseuderanthemum variabile* (pastel flower), *Echinopogon ovatus* (forest hedgehog-grass) *Microlaena stipoides* (weeping grass) and *Themeda triandra* (kangaroo grass).

The ecological community likely supports a range of animal species, including small mammals, larger grazing mammals, insectivorous and seed-foraging ground-dwelling birds, birds of prey, skinks, snakes, frogs and a large range of invertebrates. The ecological community provides shelter, food and nesting material for these animals, which in turn play important roles in the ongoing function of the ecosystem.

No detailed studies of fauna specific to the **Turpentine–Ironbark Forest of the Sydney Basin Bioregion** have been undertaken and the interactions between the faunal and floral components are poorly known. However, faunal surveys of the Cumberland Plain region identified the key animal species that now remain. Approximately 60 species of mammals were thought to be originally present on the Cumberland Plain (NSW NPWS, 1997; Leary, 2007). Recent surveys have detected the presence of 37 native mammal species, of which

only 14 are considered relatively common and widespread on the Cumberland Plain. The mammal species that remain relatively common in western Sydney include *Macropus giganteus* (eastern grey kangaroo), *Trichosurus vulpecula* (common brushtail possum), *Pteropus poliocephalus* (grey-headed flying-fox) and several micro-bat species (Leary, 2007). Microbats represent the largest mammalian group in surveys. Some mammals, such as native rodents and dasyurids, have only been captured at the margins of the plain, close to larger vegetated areas within reserves.

The NSW Scientific Committee (2011a) noted that the Blue Mountain Shale Cap Forest component of the national ecological community provides a rich habitat for fauna and supports a greater diversity and abundance of bird and mammal species than the drier eucalypt forests. Round-leaved gum, in particular, is a major source of nest hollows that supports owls, parrots, cockatoos, gliders and other animals dependent on hollows.

Occurrences of the **Turpentine–Ironbark Forest in the Sydney Basin Bioregion** ecological community are considered to be part of the nationally listed ecological community if patches are in good condition.

- Good condition is generally determined as:
  - the vegetation has some characteristic components from all structural layers (tree canopy, small tree/shrub midstorey, and understorey); and
  - the tree canopy cover is greater than 10%; and
  - the patch size is greater than one hectare.
- However, patches with a tree canopy cover of less than 10% are also included in the ecological community, if:
  - the patch of the ecological community is greater than one hectare in size; and
  - it is part of a remnant of native vegetation that is 5 hectares or more in area.

These areas enhance the potential for connectivity and viability of the ecological community. They support native flora and fauna species by facilitating gene flow among remnants and buffering against disturbance.

The nationally listed ecological community excludes patches where either the native midstorey/understorey or native canopy trees are absent. Occurrences of isolated single trees or shrubs characteristic of the ecological community therefore are excluded from the ecological community. Although these degraded occurrences have some value for biodiversity, their structure has been so severely modified, that they fall outside the definition of the ecological community.

Conservation Status

The **Turpentine–Ironbark Forest in the Sydney Basin Bioregion** is listed as **critically endangered** under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It was listed by the Minister after the Threatened Species Scientific Committee advised (TSSC, 2005) that this ecological community met three of the six eligibility criteria for listing as threatened under the EPBC Act. The Committee found that the ecological community had:

- undergone a very severe decline in its geographic distribution, of more than 95%;
- a restricted geographic distribution that makes it likely that the action of a threatening process could cause it to be lost in the near future; and
- experienced a reduction in its ecological integrity across most its range that is substantial, as indicated by degradation, weed invasion and loss of species.

Two ecological communities listed as endangered under the *NSW Threatened Species Conservation Act 1995* equate to the national **Turpentine–Ironbark Forest in the Sydney Basin Bioregion** ecological community. These are the:

- Sydney Turpentine–Ironbark Forest; and
- Blue Mountains Shale Cap Forest in the Sydney Basin Bioregion.

Distribution and Habitat

The **Turpentine–Ironbark Forest of the Sydney Basin Bioregion** is limited to the Sydney Basin Bioregion. Its occurrence is transitional between the Cumberland Plain Shale Woodlands and Shale–Gravel Transition Forest that occupies drier areas on the plain, and the Blue Gum High Forest that occurs on the higher rainfall ridges.

The **Turpentine–Ironbark Forest of the Sydney Basin Bioregion** predominantly occurs in areas with rainfall between 800-1100 mm/year (Benson and Howell, 1994; NSW NPWS, 2002). Elevation ranges from less than 320 m on the Cumberland Plain (NSW NPWS, 2002) up to 750 m on shale caps of the surrounding Woronora, Blue Mountains and Hornsby Plateaux (Keith and Benson, 1988). This ecological community is predominantly associated with relatively fertile clay soils derived from Wianamatta shale, and clay lenses of shale within Hawkesbury sandstone, less commonly occurring on transitional areas between soils derived from the Wianamatta shale and Hawkesbury sandstone, or on soils derived from Holocene alluvium, or the Mittagong formation.

The ecological community occurs within the Hawkesbury–Nepean Catchment Management Authority (merged with the former Sydney Metro Catchment Management Authority as of January 2014) and the Greater Sydney Local Land Services. It is also known from a wide range of local government areas in the Sydney region.

Threats

As the soil on which **Turpentine–Ironbark Forest of the Sydney Basin Bioregion** is found is of relatively higher fertility than the surrounding sandy soils, the ecological community has been selectively cleared for agriculture and urban development (Benson and Howell, 1990; Haworth, 2003). Most remnants are now degraded and highly fragmented, occurring within a matrix of modified urban and agricultural landscapes. The key threat to the survival of the ecological community is vegetation clearance and fragmentation. While much clearing occurred in the past for agriculture or forestry, it is an ongoing threat that is now largely due to urban development, though there are also lagged effects of fragmentation from past clearing.

Other major threats include:

- increased nutrient load and sedimentation from urban runoff and stormwater discharge;
- weed invasion;
- inappropriate fire regimes;
- mowing, which stops regrowth;
- grazing of remnants on agricultural land;
- damage through recreational activities; and
- pathogen invasion and dieback (e.g. myrtle rust).

More detail about these threats is contained in the Listing Advice (TSSC, 2005), which is available on the Internet at:
http://www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl

The following EPBC Act listed Key Threatening Processes are most relevant to the **Turpentine–Ironbark Forest in the Sydney Basin Bioregion** ecological community:

- land clearance;
- loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants; and
- novel biota and their impact on biodiversity.

Research and Monitoring Priorities

- Determine the dependencies of plant recruitment and establishment that operate within Turpentine–Ironbark Forest, particularly in relation to fire regimes and fauna interactions.
- Identify and map priority sites for protection of Turpentine–Ironbark Forest remnants, including habitat for threatened species.
- Investigate the impact of disturbances and experimentally evaluate alternative strategies to restore long-term ecological function and biodiversity, including for listed threatened and migratory species.
- Develop and implement a threat management monitoring program.
- Undertake monitoring of bush regeneration pre- and post- both disturbance (e.g. burning) and restorative actions.

Priority Actions

The following priority recovery and threat abatement actions can be undertaken to support the recovery of **Turpentine–Ironbark Forest in the Sydney Basin Bioregion**:

Habitat Loss, Disturbance and Modification

- Prevent any further clearing or fragmentation of the ecological community, through the protection of remnants and surrounding vegetation, including through appropriate local council zoning and/or the development of conservation agreements or covenants with landholders.
- Restore and enhance remaining areas of Turpentine–Ironbark Forest so that they meet the condition criteria for the ecological community or to create buffer zones and to link fragments with remnants of other native vegetation.
- Avoid removal of isolated canopy trees characteristic of the ecological community or isolated patches of remnant vegetation <1 hectare in the local government areas where it occurs, as these provide important connectivity and habitat refugia functions.
- Develop and implement appropriate management regimes to prevent further loss or decline of functionally important species and reduction in community integrity.
- Control run-off entering sites where it would cause erosion or detrimental change in nutrient or sediment levels, and undertake restoration works to restore natural hydrology.
- Liaise with planning authorities to ensure that planning and nearby development takes the protection of remnants into account, with due regard to principles for long-term conservation.

Invasive Species

- Eradicate or manage weed infestation through appropriate weeding and bush regeneration methods.

- Ensure chemicals, or other mechanisms used to manage weeds, do not have significant adverse, non-target impacts on the ecological community, e.g. undertake manual removal of weeds or spot application of herbicides.
- Manage introduced pest animals to allow natural regeneration and recovery of habitats and any threatened species, at known sites through coordinated landscape-scale control programs.

Trampling, Browsing or Grazing

- Avoid unnecessary mowing of understorey to promote regeneration of native species.
- Manage the impacts of damaging recreational activities, e.g. access by mountain bikes and other vehicles, within bushland remnants through appropriate signage and selectively limiting access to tracks.
- Identify and fence important remnants to minimise impacts from grazing and damaging recreational activities at key sites.

Fire

- Implement appropriate fire regimes necessary to maintain floristic and structural diversity. Fire management should take into account results from any research that determines if and when patches require fire for biodiversity conservation, and the requirements of both flora and fauna in the ecological community.
- Remove weeds from the ecological community and manage fuel loads in surrounding areas, to minimise the risk of inappropriate fire regimes affecting the ecological community.
- Provide maps of known occurrences and negotiate appropriate procedures with local fire brigades, including in relation to establishing fire control lines in native vegetation areas, to avoid unnecessary destruction of the ecological community.

Conservation Information

- Ensure land managers are aware of, and follow, any best practice adaptive management guidelines and other technical material developed for the Turpentine–Ironbark Forest ecological community.
- Support landholders to prepare site-specific management plans and secure protection and management of priority sites.
- In consultation with land managers, develop or support existing education programs, information products and signage to help the public recognise the presence and importance of the Turpentine–Ironbark Forest ecological community, and their responsibilities under state and local regulations and the EPBC Act.
- Raise awareness about the benefits of native biodiversity, and programs and funding opportunities to support landholders with environmental protection.

Other Recovery Actions

- Ensure local flora species are planted for any revegetation and recovery actions.
- Retain trees, logs and leaf litter and re-introduce habitat features (e.g. rocks, logs) at disturbed sites.
- Investigate options to maintain and improve connectivity, including the protection of adjoining vegetation and the replanting of key local flora species.

- Support seed harvesting and propagation techniques (having acquired the necessary permits and land access permission required) for native species not already available from nurseries, to facilitate restoration/maintenance of species diversity in revegetation sites.
- Ensure that any revegetation is undertaken in an appropriate manner (e.g. with no significant detrimental impacts on local hydrology or threatened species).

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Dangerous chemicals found present in Sydney synthetic sports field

May 07, 2024 - 6:56PM

AUSMAP's Dr Scott Wilson details the "toxic chemicals" he found present in the crumbed rubber at a synthetic sports field in Sydney, as Sky News Australia investigates the true quality of Australia's playing fields.

It comes as the European Union have begun ripping up and replacing tens of thousands of pitches, but governments and councils in Australia appear to be ignoring the warnings.

Sky News Investigations Reporter Jonathan Lea spoke to an Australian scientist about his damning study which looked at just how potentially dangerous these chemicals are.

"Heavy metals in particular were elevated," Mr Wilson said of his findings.

"Things like zinc, copper, lead.

"There was a study done in the US which showed these tyre anti-degradants actually killed Atlantic Salmon.

"We are finding these chemicals leaching off here."

Independent testing of a synthetic sports field in Sydney has found a "toxic cocktail" of chemicals capable of killing marine life and raising serious questions about the safety of those who play on it.

Community Science Group, AUSMAP carried out the test on a field belonging to an unidentified Sydney Council. It believes the results are indicative of hundreds of synthetic sports fields across the country.

"It is like a cocktail of chemicals sitting on these fields that we are potentially exposed to," said research director, Dr Scott Wilson.

The group's tests focused on what is known as "crumbed rubber," a substance sprinkled across the field to provide support and replicate the play of a proper field. The crumb, however, is made from old, shredded tyres which by-in-large have been imported.

"In our study, where we looked at the rubber particles … We are able to find that heavy metals in particular were elevated," he said. "Things like zinc, copper, arsenic lead are all present.

"Other compounds like PFAS and PAH compounds were also found. There was a cocktail of chemicals there," he said

PFAS is an umbrella term for thousands of man-made chemicals designed not to break down. The United States Environmental Protection Agency states, “studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.”

PAHs are another class of chemicals found in tyres. The British Journal of Cancer states PAHs have shown the capability to “cause mammary cancer in rodents.” While a separate 2022 study describes PAH’s ability to induce “troubles in female fertility.”

Other studies found traces of the crumb in the saliva of players, opening a potential path for the chemicals into the blood stream.

With sports fields often flowing into creeks and rivers, AUSMAP conducted its own independent lab tests to examine the impact on marine life and the broader food chain.

“Within a couple of days, the levels of chemicals in that water where the rubber crumb was sitting … was killing our crustaceans (and) our small little invertebrates that are the backbone of our eco system,” Dr Wilson told Sky News.

“We were finding the chemicals present are immediately killing these animals because they are so highly toxic.”

The issue of crumbed rubber has led the European Union to begin the mammoth task of removing some 100,000 synthetic turf across 30 nations over the next eight years.

It intends to replace the recycled tyre crumb with coconut or cork.

“What I can say is, be aware of the rubber granules and keep as far from them as possible. This is definitely what we are doing in Europe,” said Mercedes Marquez-Camacho, from the European Chemicals Agency.

As well as the effect on humans, the agency is equally worried about the spread of the tyre granules into the environment. And while they look to be rubber, the synthetic substance is actually made of plastic.

t believes somewhere between one and five percent of all granules are lost each year, a figure it estimates to be a staggering 16,000 tonnes annually.

“Your children, when they come home, they bring the rubber granules with them. And these rubber granules are made of materials that are carcinogens and also may damage the fertility and our hormonal systems,” said Ms Marquez-Camacho.

“And then when we think about the microplastics and the pollution of our environment and the understanding that there is in the scientific community that we all of us, we are drinking water that is contaminated with the microplastics, we are eating food that is contaminated with microplastics. These microplastics (are) in our bodies, and the real truth is that the scientists do not really know to what extent these microplastics may affect the human health. I would say that's a worrying situation,” she said.

A 2022 report compiled by the New South Wales, Chief Scientist, Professor, Hugh Durrant-Whyte declared, “there is insufficient information and a lack of standards about the materials and chemical composition of synthetic turf.”

The chief scientist recommended following a ‘learn and adapt’ approach.

The report, which some believe has gone under the radar as a consequence of the 2023 election notes an increase in the state's fields "from approximately 24 in 2014 and 30 in 2018." to around 180 at the time. It's now thought to be around 200 and growing.

While the European Union is moving away from the crumb, a new draft report for decision makers called "Synthetic Turf in Public Open Space" lays out the pros and cons of the fields, despite stating "research has suggested that biological pathogens, toxic chemicals and micro-plastic ingestion are all risks to human health that are associated with synthetic materials".

It also notes the carpet itself - made up of forever chemicals – has a life span of eight to 10 years before needing replacement.

The European agency was careful to avoid any criticism of Australian councils and state governments, but did say in regard to the crumb, "we do know there are toxic chemicals in there, so spreading toxic chemicals in the environment, it doesn't look like the best way to proceed."

AUSMAP's Dr Wilson made it clear there is no direct link between the product and cancer in humans but is eager for a moratorium until scientists can investigate the impact of chemicals.

"We just haven't done enough studies yet to understand the potential ecological impacts of what this material is causing," he said.

"There's not clear evidence of potential human health effects at this stage, but having said that, we should take a precautionary approach and not expose ourselves to that in the first instance."