Part 2: Climate change and habitat loss
Embedding climate change considerations

‘The Victorian Government is responsible for managing climate change risks to its own assets, services and operations. The government will also need to embed climate change considerations into policy and regulation decisions concerning industry, community services and infrastructure.’

Department of Environment 2018
WCS believes NELP’s sustainability commitment to climate change misses the point.

5. Climate change: Playing a part in Victoria achieving its emission reduction targets while preparing for the challenges presented by climate change.
   a. Reduce carbon emissions during construction and operation
   b. Design to be resilient to a changing climate

Source: NELP Sustainability Factsheet 2018
Vehicle emissions

‘Road based transport accounts for an even greater share of transport emissions in Australia than the global average, at around 85%’.

- No greenhouse gas emissions standards for vehicles.
- High car use and relatively high distances travelled per person by car.
- Low share of trips taken by public transport.
- Low ratio of capital spending on public transport compared to roads.

Source: Climate Council of Australia Ltd 2018
Tree canopy loss

‘Support a cooler Melbourne by greening urban areas, buildings, transport corridors and open spaces to create an urban forest’, aiming to mitigate the impact of climate change.’

Plan Melbourne 2017 policy point 6.4.1 (Department of Environment Land Water and Planning 2017)

• At a time when science and government policies urge the importance of increasing tree canopy, it makes no sense to either reduce the number of existing trees, or to not replace trees lost because of government infrastructure projects.

• It appears to the Society that the construction of the NELP is inconsistent with the state government’s aim of transitioning to zero growth emissions to meet Victoria’s Climate Change Act 2017. (Victoria 2017)
Tree canopy loss

• Trees sequester carbon.
• Reduce urban heat island effects.
• Absorb pollution from transport emissions.

All of these mitigate climate change.

Photo: H Smith
NELP estimates the removal or death of approximately 26,000 mature trees
Threatened ecosystems

A healthy ecosystem comprises a complex variety of interdependent flora and fauna. Elimination of any single element will upset the balance and will be likely to impact on individual species.

NELP will alter key elements of the ecosystem – vegetation, ground and surface water – thereby disrupting wildlife corridors.
Banyule wildlife corridors

• Simpson Army Barracks
• Banyule Creek
• Banyule Flats Wetlands
• Warringal Parklands
• The Yarra River

Source: Banyule City Council 2016
NELP impact more than just threatened species

The focus of the NELP EES is on threatened species. **WCS are concerned about all species within and adjacent to the NELP boundary.**

- A key threat to local biodiversity is habitat fragmentation through urbanisation.
- Any impact within Banyule’s habitat will have a subsequent impact on local biodiversity in terms of diversity of genes, the number of different species and the overall functioning of ecosystems.

Source: Banyule City Council 2014
Additional threats from NELP

Climate change and alteration to flows and temperatures in rivers and streams are additional threats to Victorian flora and fauna species and ecological communities.

Photo: D Hards
Impact of NELP on Banyule habitat

WCS is concerned about impacts of the following on the viability of our wildlife: their ability to feed, breed and find safe shelter

- construction vibration, noise and lights
- loss of food, shelter & hollows until regrowth
- lack of surface water sources
- fragmentation of wildlife corridor
- loss of biodiversity
Part 3: Ecology
Species of Concern

Flora
• Matted Flax-lily
• Studley Park Gum
• Clover Glycine
• River Swamp Wallaby-grass

Fauna
• Swift Parrot
• Powerful Owl
• Latham’s Snipe
• Grey-headed Flying-fox
• Macquarie Perch
• Australian Grayling
Matted Flax-lily *(Dianella amoena)*

- EPBC listed as endangered with a total population of 1400-2500 (National Recovery Plan 2010).
- Simpson Barracks has one of the largest known populations, with 83 plants within the project area.
- 12 additional plants elsewhere in the project area.
- Mitigation proposed by NELP involves removing plants and replanting at another site (translocation).
Matted Flax-lily: Risk assessment

95 Matted Flax-lily to be removed due to the North East Link = 3.8% - 6.7% of total population, ~ 30% of local population.

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<th>MODERATE</th>
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<td>Loss of &lt;1% of the local area population for a listed species</td>
<td>Loss of 1-5% of the local area population for a listed species</td>
<td>Loss of &gt;6-15% of the local area population for a listed species</td>
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Matted Flax-lily: Mitigation by translocation

- Relatively new approach for the Matted Flax-lily that is used because it is convenient.
- National Recovery Plan for the Matted Flax-lily (Carter 2010) suggests translocation to “bolster existing populations or establish new populations”, but does not mention translocation to mitigate the loss of an existing population.
- The National Recovery Plan and the Department of Environment do not specifically list translocation under “management practices required to conserve the species”.

Warringal Conservation Society
Matted Flax-lily: Translocation is a risky strategy

- **Sugarloaf Pipeline** – losses between 5-30% at five of six translocation sites over 5 years, invasion of by weeds and indigenous plants a major issue.

- **Aurora, Epping North** – after 9 years translocated plants were smaller, in poorer health and had altered flowering (Mr Miller did not consider this report).

- **Melbourne Wholesale Market** – Michael Goddard *(Tabled doc 142)* noted poor outcomes.

- **DELWP** *(Tabled doc 93)* – refers to “the current low success rates of other Matted Flax-lily translocations in Melbourne”.

Warringal Conservation Society
Matted Flax-lily: Translocation site suitability

- The attributes that make parts of the Simpson Barracks high quality habitat have not been determined.
- Proposed translocation sites either do not have Matted Flax-lily, or have a depleted population, indicating the presence of detrimental factors.
- It is highly unlikely that translocation sites have the attributes required to replace high quality habitat that will be lost at Simpson Barracks.

Conclusion: Translocation provides limited mitigation for the loss of Matted Flax-lily in the Simpson Barracks.
Studley Park Gum

- Rare viable natural hybrid between River Red Gum and Swamp Gum.
- Listed as endangered on DELWP advisory list.
- Simpson Barracks contains the largest and most viable population, which DELWP consider the project will potentially eliminate (Tabled doc 93).
- General native vegetation offsets proposed as compensation by NELP.
- DELWP requested taxon-specific mitigation.

Studley Park Gum in Yallambie
Studley Park Gum

Mitigation/Management Framework Versions 1 & 2

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<td>Studley Park Gum Management Framework</td>
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<td>Overall goal</td>
<td>“establish a new self-sustaining population of Studley Park Gum that is capable of surviving in the long term”</td>
<td>“initiate and deliver the establishment of a new population of Studley Park Gum to ensure their conservation”</td>
<td>No commitment to deliver long term self-sustaining population.</td>
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<td>Recipient site</td>
<td>“Secure an appropriate recipient site”</td>
<td>“Identify an appropriate recipient site”</td>
<td>No plan to secure recipient site</td>
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Conclusion: Relocating hybrid swarm not practical – framework will not mitigate the loss of Studley Park Gum.
Other threatened flora

**Clover Glycine** (EPBC Vulnerable, FFG Threatened)
- Not detected - but dormant seeds require flood or fire to germinate.
- Suitable habitat is present so the precautionary principle should apply.

**River Swamp Wallaby-grass** (EPBC Vulnerable)
- Assumed present.
- Effects of water drawdown are unclear so the precautionary principle should apply.
Swift Parrot

- Critically endangered under the EPBC Act with less than 2000 wild birds thought to remain.
- Banyule and surrounding area provides overwintering habitat on a yearly basis.
- Eucalypts at Macleod Station (within the project area) supported around 30 Swift Parrots for 5 weeks in 2015.
- No firm commitment that these priority habitat trees will not be harmed.
Swift Parrot habitat: Simpson Barracks

- Swift parrots recorded at Simpson Barracks in the 1990s but surveys are now rare due to lack of access.


- NELP suggest River Red Gum in Simpson Barracks not preferred habitat, but most photographs taken at Macleod (eBird) show feeding on lerp in River Red Gum.
Swift Parrot habitat

Swift Parrots require a choice of habitats to be resilient due to seasonal variation in flowering and lerp abundance.

Commitments required to ensure the preservation of Swift Parrot habit:

- priority habitat at Macleod Station should be protected
- eucalypts at Simpson Barracks should be preserved as part of a local network of habitat that sustains the Swift Parrot.
Powerful Owl

- Listed as threatened under the FFG Act.
- Apex predator that feeds on possums.
- The project area supports the Powerful Owl.
- Deakin University tracked a male that roosts in vicinity of Banyule Flats and the Yarra Valley Country club (34 days in April 2016).
Banyule Flats Powerful Owl (Male): Tracking his range (April 2016)

Yellow = home range, Red = NELP impacts, Magenta = Yarra River-Bullen Precinct

(Adapted from Carter, Cooke et al 2019)
Powerful Owl

• NELP surface impacts and disturbance at: Simpson Barracks, Banksia Park, the Heide Gallery grounds, Yarra River corridor adjacent to Bulleen Industrial Park and former drive-in site.

• Male shares territory with a female and they have successfully raised young.

• April tracking timeframe is outside the breeding period.

• June to September- male hunts for the female during a 38 day incubation and then for two owlets.

The Banyule Flats Powerful Owl (Female)

Photo: J. Deane
Prey in a successful breeding year

2016

- Walked 336 days
- Owl(s) found 89% (300) of these days
- Owl(s) with prey 27% (81) of these days
- Female entered nest 14 Jun
- 1st Owlet died in nest at some stage
- 2nd Owlet fledged 19 Sep

Graph showing the number of days an owl found with prey by month:
- January: 4 days
- February: 10 days
- March: 2 days
- April: 1 day
- May: 1 day
- June: 15 days
- July: 12 days
- August: 14 days
- September: 7 days
- October: 2 days
- November: 5 days
- December: 3 days

Courtesy of Lyn and Geoff Easton
Prey in an unsuccessful year (not enough possums)
Powerful Owl

Nesting hollows

• Competition for large hollows with Cockatoos, Kookaburras, Wood Ducks.

• Simpson Barracks contains old hollow bearing trees that will be lost.

Conclusion: Loss of hunting territory and depletion of nesting hollows are likely to reduce the chances of Powerful Owl successfully breeding.
Other fauna

**Latham’s Snipe** (EPBC migratory)
- Migratory species that use Banyule Swamp yearly.
- Habitat at Banyule Swamp not properly considered based on the assumption that tunnelling avoids impacts.

**Grey-headed Flying Fox** (EPBC vulnerable, FFG threatened).
- Loss of forage trees will contribute to the cumulative loss of habitat that threatens this species.

**Macquarie Perch and Australian Grayling**
- Potential impacts due to reduced water quality and flow changes in the Yarra.
Species of concern at Simpson Barracks

*Habitat at Simpson Barracks

Flora
• Matted Flax-lily*
• Studley Park Gum*
• Clover Glycine*
• River Swamp Wallaby-grass

Fauna
• Swift Parrot*
• Powerful Owl*
• Latham’s Snipe
• Grey-headed Flying-fox*
• Macquarie Perch
• Australian Grayling
Part 4: Conclusion
If NELP is approved for construction, WCS seek the following broad conditions:

• An independent committee, that would include representatives from community, local government and environmental experts to receive and review regular reports of air quality, water quality, hydrology, noise levels, construction incidents and complaints from the public.

• Issues should be referred to the relevant authority requesting action.

• All reporting should be transparent and available to the community.

• These requests are broadly reflected in EPR AR3.
If NELP is approved for construction, WCS seek the following broad conditions:

- The adoption of international best-practice standards for construction and monitoring (e.g. minimum levels for noise and air emissions including particulates), thus affording better protection than current Australian standards and Victorian policies.
- Identification of the River Red Gum (2019 National Trust Tree of the Year) at the corner of Bridge Street and Manningham Road as a ‘no-go’ zone.
- Removal of the Lower Plenty road interchange.
If NELP is approved for construction, WCS seek the following broad conditions:

- Re-development of the works area south of the Manningham interchange (current industrial estate and drive-in site) as open public green space to compensate for the overall loss of conservation, passive and active space within the north-south corridor of the NELP.

- Additional 2 for 1 tree planting within the corridor rather than the virtual ‘no net loss’ proposal of 30,000 replacement for 26,000 lost and with offsets outside the area. Re-vegetation of understory and ground cover species be undertaken. These plants should be additional to the replacement trees specified in EPR AR3.
If NELP is approved for construction, WCS seek the following broad conditions:

• Bored extension of the tunnel north of Lower Plenty Road to protect the Studley Park Gum and Matted Flax-lily habitat at Simpson Barracks.

• Protection of Banyule Flats habitat from overflow from water treatment facility north of Lower Plenty Road, and water drawdown.

• Protection and enhancement of the quality of water entering Banyule Creek, Koonung Creek and the Yarra.

• Recognition of the significance of the habitat trees used by Swift Parrots at Macleod Railway Station as a ‘no-go zone’ and a commitment to minimise impacts.

• Mitigation of the loss of large trees due to groundwater drawdown.
If NELP is approved for construction, WCS seek the following broad conditions:

- The Yarra River Protection (Willip-gin Birrarung Murron) Act 2017 protects the Yarra and its tributaries from private developments but it is inconsistent that public infrastructure development is exempt. (2017)
- All surface water finishes up in the Yarra. After years of lobbying for the Yarra’s protection we must do just that.
- WCS believes the environmental impacts of NELP are too high.
Thank you