Submission to Senate Inquiry on *Save the Koala* Bill. Vic Jurskis B.Sc. (For.), FIFA, MRAHS

I am a forester and ecological historian with 45 years' experience in forest research and management; a Fellow of the Institute of Foresters of Australia and a Member of the Royal Australian Historical Society. I've published many scientific and historical papers and two books about firestick ecology and koalas. I am one of very few scientists who have conducted detailed ecological studies of a natural low-density koala population and the only one to publish a comprehensive review of the ecological history of the koala throughout its range: https://www.publish.csiro.au/wr/WR17032

Summary of this submission

On face value, the bill is a reasonable legislative response to the perceived status of the koala and perceived threats to its persistence in the wild, north of Victoria. However, perceptions of the koala's status are incorrect. It is not a threatened species. It is an irruptive species throughout its range. There are many more koalas across a much wider area than there were when Europeans arrived. Perceived threats of drought, disease, dog attacks and road trauma are consequences of irruptions into unsustainably dense populations.

The Environment and Communications References Committee erred in its report of September 2011 and the Threatened Species Scientific Committee erred in its advice to the Minister, which led to the listing of koalas from ACT, NSW and QLD as a threatened species. The listing was based on ignorance of their ecological history during a century after European arrival and incorrect advice from scientific experts.

The potential effects of the bill depend entirely upon the inappropriate listing of koalas from ACT, NSW and QLD under the Act. The listing must be urgently reviewed in the light of a large body of scientific and historical information which was not considered by the References Committee nor by the TSSC in formulating its recommendations to list these koalas. The Minister was seriously misinformed. Also new information is available.

At the second reading, Chair of the Legislation Committee and Deputy Chair of the References Committee, Senator Fawcett, raised concerns about potential effects the bill might have on harvesting of timber plantations on Kangaroo Island and residential developments in the Adelaide Hills. These concerns are misplaced, because koalas in those areas are not listed as a threatened species.

It seems clear that the bill will fail because it is not supported by the major parties. The problem remains that koalas are inappropriately listed as a threatened species through most of their range. This problem can be resolved only by the Minister delisting koalas. The Legislation Committee should request the TSSC to provide new advice to the Minister on the listing of koalas under the EPBC Act. The advice should take cognisance of the ecological history of koalas since European occupation.

Koala Population Timeline

1788 Europeans arrive
1791-1815 Numerous expeditions seek to cross the Blue Mountains and beyond. No koalas are sighted
1798 Explorer John Price is shown some koala dung in forest south of the Cumberland Plain and told of the existence of the "Cullawine" which is said to resemble the sloth
1799-1840s Southeast Queensland is explored and occupied. No koalas are seen
1802 Barallier's guide Gory barters two spears and a tomahawk for a sample of two koala feet, in forest south of Cumberland Plain. Europeans employ Aborigines to search for koalas
1803 A live koala is brought in to Sydney from forest south of the Cumberland Plain. The Gazette reports: "*its food consists solely of gum leaves, in the choice of which it is excessively nice*"
1810 The first drawing of a koala is published. It is described as "*a solitary animal rarely to be met with*"
1815 Surveyor George Evans reports extensive Aboriginal burning in the Blue Mountains
1818 Naturalist Allan Cunningham's Aboriginal guide kills a koala in the Illawarra
1821 Explorer Hamilton Hume's Aboriginal guide is informed by local Aborigines of koalas living on a scrubby hill in the upper Shoalhaven
1817-1846 Oxley's, Sturt's and Mitchell's parties conduct many extensive explorations throughout the koala's range including the Pilliga – Liverpool Plains. No koalas are seen.

1830s Europeans occupy grassy woodlands in coastal valleys of NSW and VIC and establish pastures. No koalas are sighted. Aboriginal burning is disrupted right around the coastal side of the Great Dividing Range in southeastern Australia

1836 Surveyor Govett writes of plentiful koalas that he saw (sometime between 1828 and 1833) in dense young stringybark forests growing up in the foothills on both sides of the Blue Mountains

1840 Strzelecki becomes the only explorer ever to see koalas. His party eats them to survive as they struggle through dense 20 year old forest in the Strzelecki Ranges, initiated by our first megafire around 1820

1844 Naturalist John Gould searches for koalas near Sydney (Govett and Strzelecki have both left Australia). Even with Aboriginal guides, koalas "*could rarely be detected*" except by "*diligent*" search and only in thick scrub on the rough escarpments of the Illawarra and the Liverpool Ranges. Gould predicts their extinction.

1851 Less than two decades after Aboriginal burning was disrupted in Victoria, the Black Thursday fires incinerate 5 million hectares including the Strzeleckis

1860s Young koalas invade woodlands across southeastern Australia to eat soft young leaves constantly resprouting in declining trees. e.g. Cumberland Plain, Bega Valley in NSW; Goulburn Valley, Gippsland Plains in VIC

1870s-1910 Europeans clear and burn the majority of the Strzelecki Ranges to establish dairy farms. They find plagues of dingoes feeding on plagues of koalas

1878 wet seasons germinate the Pilliga Scrub in former cypress woodlands abandoned by pastoralists during the preceding drought

1887 Koala plagues irrupt in valley woodlands across the southeast. Koalas are malnourished and diseased. An export fur industry commences. Koalas continue to increase

1890s Koalas irrupt in southeast QLD

1895 The Federation Drought commences in the south (it starts and finishes later in the north)

1898 The Red Tuesday fires rage through the Strzeleckis

1898 Koalas are legally protected in VIC

1903 Koalas are legally protected in NSW

1905-1910 Gum leaves frizzle in the drought, koala numbers crash. They disappear from all woodlands between the Gulf of St. Vincent in SA and Moreton Bay in QLD. Stable low-density populations persist unnoticed in forests.

1906 Koala hunting is regulated in QLD.

1910 Plagues of koalas are reported in the Pilliga along with plagues of foxes feeding on them

1914-1918 Pilliga koalas crash in droughts at the start and finish of The Great War

1920s Koalas irrupt in central and northeast QLD where pastoral development was delayed compared to further south. They suffer malnutrition and disease

1927 The last open season is declared on koalas in QLD

1927-1933 Koalas continue to increase in central and northeast QLD

1933-1939 Koalas crash in central and northeast QLD during a period of mostly below average rainfall

1934 VIC Inspector of Fisheries and Game, Fred Lewis, reports that koalas are extinct in SA and NSW and there are "*very few"* left in the Strzelecki Ranges. He claims that the species is doomed to extinction in mainland Australia.

1939 Black Friday fires rage in Strzeleckis

1949 A mail-out reveals that koalas have been sighted in 109 separate locations across NSW since they supposedly became extinct in the 1920s

1974 NSW National Parks and Wildlife Service (NPWS) is established

1975 NPWS conducts a mail-out survey which reveals more koalas than in 1920-1949

1976 A meeting of 43 koala experts in Sydney unanimously agrees that koalas are in absolutely no danger of extinction

1977 Sydney water supply catchments, south of the Cumberland Plain, burn in high intensity wildfires

1970s Rural residential developments commence in southeast QLD. Pastoral lands are alienated/destocked. Mature trees decline and saplings proliferate

1970s-1980s Ringbarking and poisoning of eucalypts ceases in the Pilliga and harvesting of small ironbark trees creates dense coppice regrowth

1980 Logging and high intensity wildfires northeast of Bega initiate dense young forests

From the 1980s Prescribed burning in NSW forests is reduced as more National Parks and more environmental regulations are created

1986 Koalas begin to irrupt once more on southern edge of the Cumberland Plain

1987 Another mailout by NPWS turns up even more koala sightings at even more locations in NSW

1987 The first ecological study of koalas in southeast Queensland commences in a dense population

1987-1997 Koala population densities double in southeast Queensland. Moreton Bay District becomes the Koala Coast. Koalas increase in the Pilliga

1990 NSW NPWS compares koala sightings in 1985-87 against sightings over 60 years from the 1920s. They report that koalas have disappeared from hundreds of areas and are mainly confined to the north coast. They host a *Koala Summit*, launching an anti-logging campaign to create more parks

1990s There is a boom in eucalypt amenity plantings at Gunnedah – Liverpool Plains

1991 Scientific research by Forestry Commission finds that NSW north coast koalas are concentrated in dense young regrowth forests established by heavy logging, and in eucalypt plantations. There are 3 times more koalas in young forests than in oldgrowth

1991-2001 Koalas irrupt at Pilliga – Gunnedah – Liverpool Plains

1992 NSW lists koalas as vulnerable to extinction

1995 Regrowth forests and plantations near Coffs Harbour are locked up to save koalas

1995 Koala populations and chronic eucalypt decline are increasing in all NSW north coast forests

1997-2001 Koala populations and chronic eucalypt decline are increasing in dense young forests and oldgrowth forests northeast of Bega.

2001-2009 Koala numbers crash on the Koala Coast and at Pilliga – Gunnedah – Liverpool Plains. Other populations continue to increase during the Millennium Drought

2009 Black Saturday fires rage in the Strzeleckis. Despite twenty megafires during two centuries after 1820, intensive clearing for farms from 1870 to 1910 and short-rotation forestry plantings and fellings since the 1940s, koalas are still in high densities

2010 TSSC wrongly advises the Environment Minister that there's obviously been a marked decline in the total koala population, and rightly advises that there are not enough data to show that it meets the criteria for listing as a threatened species

2010 NSW NPWS claims that there have never been many koalas in the Blue Mountains. Koalas supposedly relied on woodlands in the valleys and plains that have since been cleared for agriculture and urban development

2011 Senate Environment References Committee reports that there were maybe 10 million koalas when Europeans arrived and saw none. They recommend that the TSSC includes population data in future advices to the Minister and that the Minister considers listing the koala as a vulnerable species in some areas

2011 November TSSC revises its advice to the Minister on the basis of "*new information mostly arising from the Senate Inquiry*". TSSC recommends that the Minister designates QLD, NSW, ACT koalas as a species for the purposes of the EPBC Act and lists them as vulnerable.

2012 February 17 koala experts gather in Brisbane to synthesise population data

2012 April QLD, NSW, ACT koalas are listed as vulnerable under EPBC Act

2013 High Intensity wildfires burn across Blue Mountains and to the south of Cumberland Plain

2014 NPWS makes a model 'showing' that koalas are extinct at Eden, except for a few survivors in a 'climate refuge' northeast of Bega

2016 Experts publish their synthesised population data in a scientific journal, acknowledging that they made it up using 'The Delphi Process': "*A quantitative, scientific method for deriving estimates of koala populations and trends was possible, in the absence of empirical data on abundances*."

2016 NSW declares a new koala park to 'protect' the irrupting population northeast of Bega

2016 NSW Chief Scientist conducts an *Independent Review into the Decline of Koala Populations in Key Areas of NSW*, based on 4 case studies by NPWS/OEH. She finds that 3 irrupting populations at Campbelltown (southern edge of the Cumberland Plain), Coffs Harbour and Eden (especially northeast of Bega) are respectively: *stable or increasing*; *stable to slowly declining*; *significantly reduced* to about 45 koalas. The unsustainably dense Liverpool Plains-Pilliga population which crashed in the Millennium Drought is said to have suffered a *dramatic decline*

2018 NSW releases a *Koala Strategy* which aims to "*stabilise and then increase koala numbers*" mainly by creating 24,000 hectares of new koala parks

2018 NSW Department of Primary Industries publishes scientific research showing that koala numbers are 5 times higher than previously thought on the north coast and are not affected in any way by logging.
2018 NSW DPI gets more funding to do more research about the non-existent impacts of logging on koalas
2019 NSW DPI publishes scientific research showing that koala densities are much higher northeast of Bega (where supposedly only about 45 survivors are hanging on in a 'climate refuge') than they are on the north coast where they are 5 times higher than previously thought
2019 NSW Parliament holds a Koala Inquiry.
2019 Lightning starts what will become the world's largest ever wildfire from a single ignition, more than half a million hectares, in 'protected' koala habitat in the Blue Mountains wilderness
2019 During the megafires, Science for Wildlife tells the NSW Koala Inquiry that koalas started "*popping up*" during the 2013 fire disasters in the Blue Mountains. Now "*Everywhere we look we find a lot of koalas – a young and expanding population*"
2020 Soon after the Black Summer Fires, masses of soft young eucalypt foliage irrupt on resprouting trees and saplings across NSW
2020 June NSW Koala Inquiry finds that, given the loss of koalas/habitat in the Black Summer megafires, koalas will be extinct by 2050 unless there's urgent government intervention to 'protect' habitat
2020 July NSW Environment Minister Matt Kean announces a plan to double koala numbers by 2050
2021 Climate Councillor Tim Flannery reports on ABC Catalyst that koalas and joeys just born when the Black Summer fires ripped through their habitat in southern NSW are in great condition and doing very well.

TSSC advice to the Minister
The advice that there was a > 30% decline of koalas in QLD, NSW and ACT koalas between 1990 and 2010, making them eligible for listing as a threatened species is incorrect. Accurate population estimates are still not available because nearly all surveys have used grossly inefficient and uninformative methods. Nevertheless, comparisons over time revealed that koalas were increasing in all areas during the early nineties and continued to increase in most areas until 2010 and beyond.

Crashes occurred in some unsustainably dense populations at Pilliga-Liverpool Plains and the Koala Coast after 2000 as a consequence of drought. There were very few or no koalas in these areas when Europeans arrived. Populations irrupted from the late nineteenth century after pastoral development and crashed in the Federation Drought before irrupting again during the late 20th Century. Koalas are in no danger of extinction anywhere in their natural range.

Conclusion I would be happy to support this information by giving evidence before the Committee and tabling relevant reference material. I would also be delighted to assist the TSSC in a similar manner.
Recommendation That the Committee requests the TSSC: to review additional historical and scientific evidence which they have not previously considered and new scientific information on the status of the koala, available since November 2011, and to provide a revised advice to the Minister.

Key references
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