



## **Conserving Koala Country**

### **2016 Field Report**

Lead Principal Investigator: Dr Desley Whisson

Report completed by: Dr Desley Whisson

Period covered by this report: 2016 field season

Report completed on: January 18, 2017

Research site: Otway National Park



Dear Earthwatchers,

Thank you for joining me on a 2016 Conserving Koala Country expedition. We worked hard.... VERY HARD.... But we also shared lots of laughs and together created some great memories. I hope that you had a great time, and enjoyed seeing our beautiful field site, and visiting with our awesome koalas. 2016 marks the final year of the Conserving Koala Country project. Although I intend to continue some koala research at Cape Otway, it will be at a reduced level that doesn't require Earthwatch support. It was a difficult but necessary decision to make. I know that I will miss the interactions with Earthwatchers (but probably not the shopping for the trips!).

We had just the two expeditions in 2016 (February and November). In both trips, all participants experienced 'real' field work. There was a lot of bush-bashing, plenty of tree-hugging, and a few battles with leeches. While some of that may not count as enjoyable, we did get to see (and often photographed) hundreds of koalas, experience some amazing sunsets, and visit a few of the spectacular southern Australian beaches.

During both trips, we collected a substantial amount of data that will help us better understand the ecology of southern koala populations and their habitats. We desperately need this information to help us manage our koalas and habitats more effectively.

Again, a BIG THANK YOU for your participation and friendship. If you'd like to hear updates about Cape Otway, please check my blog (<http://otwaykoalas.blogspot.com/>).

Best wishes,

A handwritten signature in black ink, appearing to read "Desley".

Desley

## **Section One: Scientific research achievements**

### **Top Highlights from the Past Season**

Monitoring at long-term sites indicates that koala populations in manna gum woodlands are still at densities that cannot be sustained by their habitat. This is despite the translocation of over 300 koalas from the area during a government program in late 2015. Long-term management (ongoing translocations and fertility control) is urgently required to avoid future population and habitat crashes.

### **Reporting Against Research Objectives**

#### **Objective 1: Koala population characteristics**

Population monitoring was undertaken in manna gum sites in February and November 2016. All other sites were surveyed once in November 2016. Average koala density in manna gum (i.e. High koala preference, N = 8) sites showed a slight decline from  $7.93 + 1.42$  [SE] koalas/hectare in November 2015 to  $5.08 + 1.12$  [SE] koalas/hectare in November 2016. This decline is probably due to the translocation of approximately 300 koalas from manna gum woodlands by the Department of Environment, Land, Water and Planning (DELWP) in November/December 2015 (Figure 1).

Koala densities remained relatively stable in other habitat types with an average of  $5.67 + 1.43$  koalas/hectare in medium preference habitats (i.e. forests comprising swamp gum, blue gum, or a mix of species N = 7), and  $0.74 + 0.28$  koalas/hectare in low preference habitats (messmate stringybark and mountain ash forests; N = 7).

#### **Objective 2: Habitat characteristics**

Habitat assessments were completed in monitoring sites in November 2016. Manna gum woodlands are in poor condition. Average tree canopy cover across sites was only  $21.95 + 5.53\%$  which is similar to that recorded in November 2015. Defoliation due to koalas is not as conspicuous for other tree species with an average canopy cover of  $31.18\%$  and  $42.28\%$  for swamp gum (*E. ovata*) and messmate stringybark (*E. obliqua*) respectively.

#### **Objective 3: Koala movements and habitat use**

Field work towards this objective was completed in 2014. A manuscript from this component of the Earthwatch project was published this year.

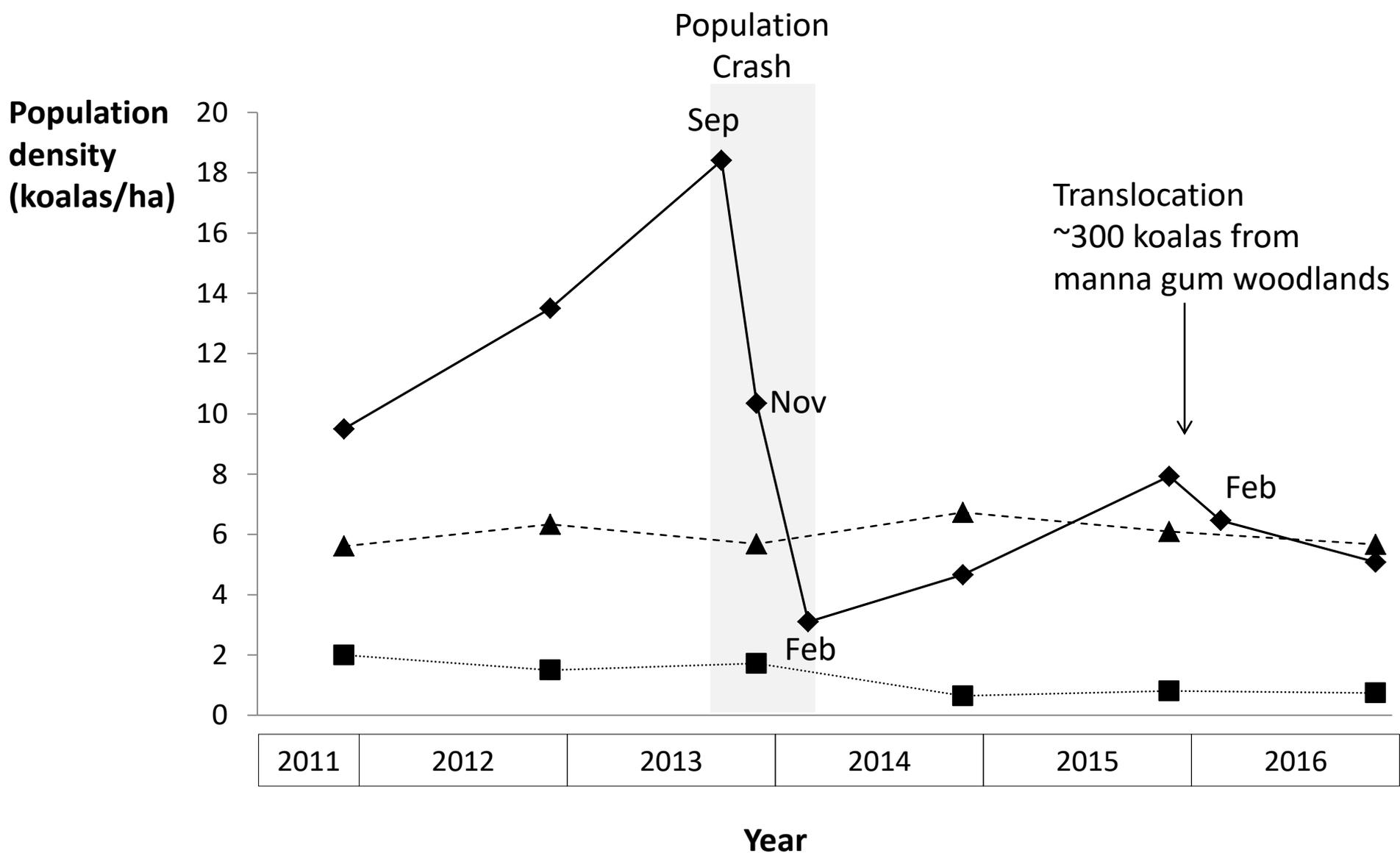


Figure 1. Koala population trends in different habitat types at Cape Otway. Habitats are classified as High  $\blacklozenge$ , Medium  $\blacktriangle$ , and Low  $\blacksquare$  according to food tree preferences of koalas.

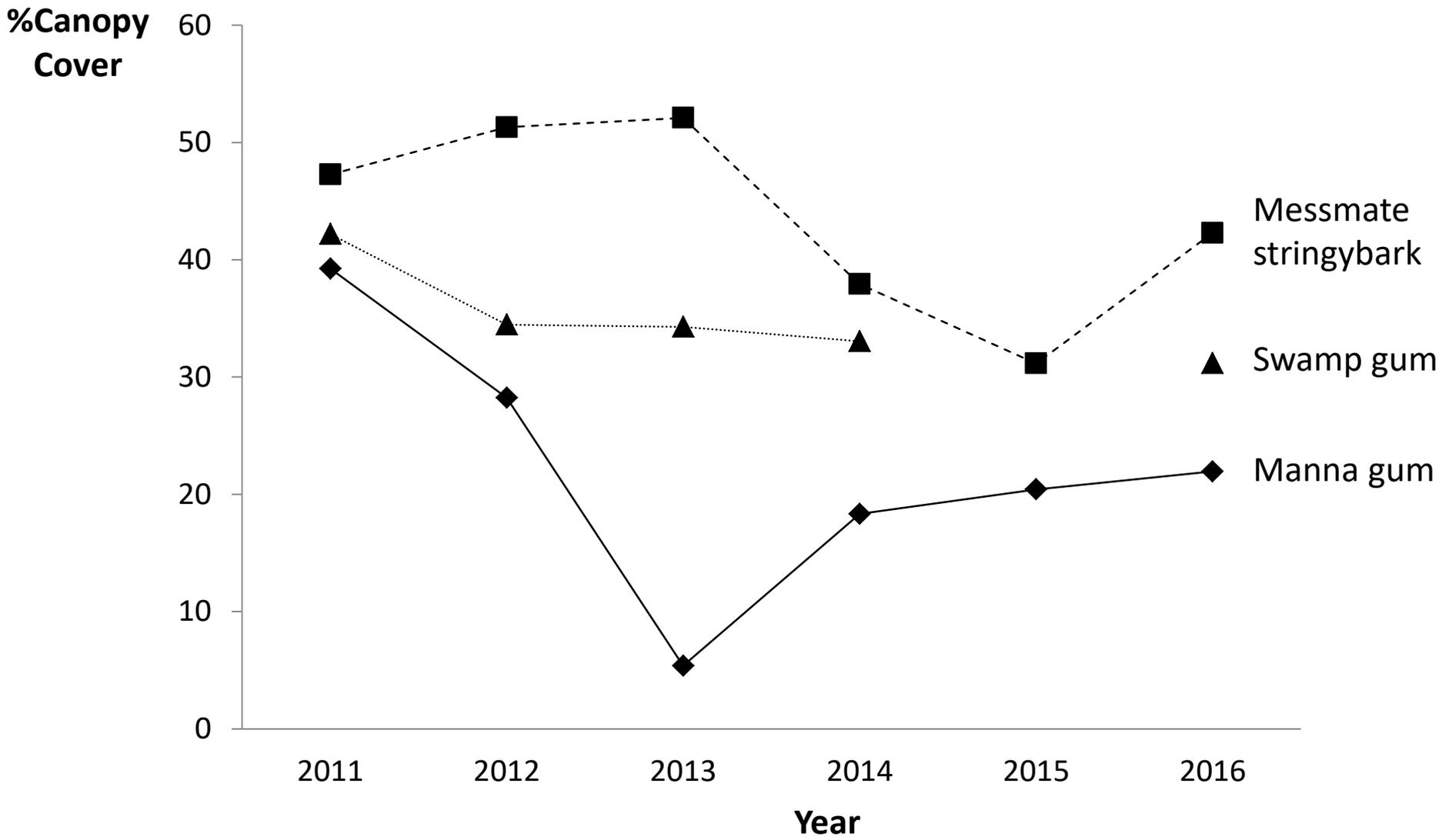


Figure 2. Canopy cover of three tree species: Manna gum, Swamp gum and Messmate stringybark from 2011 to 2016.

## **Section Two: Impacts**

### **National or Regional**

In 2016, we continued to work closely with the Victorian Department of Environment, Land, Water and Planning, providing the results of our surveys as well as advice on the management of koalas at Cape Otway and statewide. The PI (Desley Whisson) is a member of an expert panel formed by the Minister for Environment to advise DELWP on appropriate management actions for koalas at Cape Otway (<http://delwp.vic.gov.au/environment-and-wildlife/wildlife/koalas#management>).

### **Local**

In 2016, we continued to work closely with local landholders to advise on habitat management (tree banding, revegetation, impacts of government actions).

### **Developing Environmental Leaders**

Deakin University students (2 honours students) and local landholders have participated in field work. In two Earthwatch Expeditions during the year, there were a total of 12 participants from 6 countries (Romania [1], Germany [1], Japan [1], UK [1], USA [7], Australia [1]).

### **Actions or Activities that Enhance Natural and/or Social Capital**

Several hundred manna gum seedlings were grown from seed collected during previous expeditions. Some (~100) were provided to a local landholder and were planted in July 2016. Others are still being raised for planting in 2017.

### **Local Community Activities**

We are in close communication with local landholders for site access, and use the opportunity to provide them with information about our research findings.

### **Peer Reviewed Publications**

Whisson DA, Dixon V, Taylor ML, Melzer A (2016) Failure to Respond to Food Resource Decline Has Catastrophic Consequences for Koalas in a High-Density Population in Southern Australia. PLoS ONE 11(1): e0144348. doi:10.1371/journal.pone.0144348.  
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0144348>

### **Other Literature**

Watchorn, D. J. (2016) The mating system of koalas (*Phascolarctos cinereus*) in a high-density southern population. Honours thesis, Deakin University.

## **Acknowledgements**

We are grateful for the support of all of the local landholders who allow us access to their properties for monitoring koalas and trees. We particularly would like to thank Bimbi Park owners Frank and Katrina Fotinas and their family, and local landholders Pat and Cyril Marriner. A project such as this would not be possible without them.