

Question: **The CHAIR:** From the South Coast, then—the South Coast of New South Wales—what is your estimate of how many koalas are in that part of New South Wales?

Answer:

Context

The Chief Scientist's report defined the South Coast as Bega Valley Shire and estimated, based on misinformation from OEH, that the population is 30-60 animals, all within a small area in the north east. Fifteen "*experts*" defined the South Coast as a much larger area (Adams-Hosking *et al.* 2016), more closely corresponding to common usage. It is difficult to tell from their small scale map (~ 1: 3.3 million), but the South Coast appears to extend as far north as Budawang National Park in the hinterland and Ulladulla on the coast. The experts guessed "*in the absence of empirical data*", that the population is 655 and declining.

My estimate prior to recent irruptions

Jurskis and Potter (1997), using real data for home ranges of radio-collared koalas, estimated koala numbers in Eden Management Area (EMA), roughly comparable with, but somewhat larger than the South Coast as defined by the Chief Scientist. The estimate was between 800 and 1600 koalas, about 30 times greater than the Chief Scientist's misinformed estimate. Extrapolating on the basis of an eyeball assessment of the proportional area of forest from small scale maps, the comparable estimate for the South Coast as defined by the experts, would be in the order of 4000 koalas, six times as many as the experts' guess and three times more than their "*average of upper bounds*".

Recent irruptions

A regional call playback survey in 1997 found koalas throughout the EMA, but the detection rate in Mumbulla State Forest in the northeast was 10 times that in the remainder of the area (Jurskis *et al.* 2001). OEH data (DECCW 2010, OEH 2016) and DPI data (Law *et al.* 2019) have since confirmed that koalas are irrupting in the northeast and northwest of the EMA and further north within the South Coast as defined by the experts. Male koalas were detected at 88% of survey sites in Mumbulla State Forest northeast of Bega (Law *et al.* 2019) compared to only 64% on the north coast. (Law's *et al.* (2019) paper had not been published by the closing date of submissions to this Inquiry, so I wasn't able to refer to it in my submission.)

Multiple recent sightings indicate that koalas are also irrupting in the south and west of the EMA, where OEH and former employee, now Independent Expert, Dr. Lunney, claim that they are extinct. I provided you with photos of one of these koalas from a supposedly extinct population that is clearly irrupting (e.g. Jurskis 2017). Densities of irrupting populations near Campbelltown and on the North Coast are around 0.03 per hectare or higher. Densities in the north of the EMA are probably 0.06 or higher, about ten times their density prior to irruptions (Jurskis and Potter 1997).

A conservative, empirically based estimate of koala numbers on the south coast would be the total area of native forest multiplied by 0.015. A very rough guess of 2 million hectares would give you 30,000 animals.

The big picture

The South Coast koalas are part of a continuous koala population from East Gippsland in Victoria to the Hunter Valley in NSW. Close *et al.* (2015) suggested it might have a density of 0.01 per hectare. However, that is about the density of a natural stable population, and koalas are known to be irrupting in many places within this range (Close *et al.* 2015, Jurskis 2017). For example, Dr. Leigh told you on 9th December that "*What we are finding are large growing populations*" and "*Everywhere we look we find a lot of koalas*". Unaccountably, when her colleague Dr. Lunney was asked, in relation to my evidence: "*There is not an abundance of koalas in New South Wales, is there?*" he replied "*No.*".

References

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