

**Senate Standing Committee on Environment and Communications**  
**Legislation Committee**  
Answers to questions on notice  
**Environment portfolio**

**Question No:** 99  
**Hearing:** Additional Estimates  
**Outcome:** Outcome 2  
**Programme:** Climate Change and Renewable Energy (CCARE)  
**Topic:** National Pollutant Inventory  
**Hansard Page:** N/A  
**Question Date:** 24 February 2016  
**Question Type:** Written

**Senator Waters asked:**

1. Please confirm the Department's explanation for the wide divergence between the SLATS database and the Department's own tree-clearing emissions data. In previous Questions on Notice, the Department has asserted that SLATS does not use a metric requiring 20% crown cover, but our understanding is that is incorrect.
2. Has the Department taken any action to investigate the reasons for the growing inconsistency between the results of SLATS and the Department's own model regarding Queensland tree-clearing emissions?
3. Is the Department confident that its own model is accurate?

**Answer:**

1. The Department's Full Carbon Accounting Model (FullCAM) is designed to track and report greenhouse gas emissions and removals from the land sector. It uses detailed satellite data to monitor national scale forest cover changes and is used for reporting under the United Nations Framework Convention on Climate change (UNFCCC) and the Kyoto Protocol. Australia's definition of forests includes trees with a height of at least two meters, canopy crown cover of at least 20 per cent and a minimum area of 0.2 ha.
  - The Department also monitors sparse woody vegetation (< 20 per cent canopy cover) which does not meet Australia's forest definition. Changes in sparse woody vegetation cover are reported under the grassland account, rather than land conversion.
  - The Statewide Land cover and Trees Study (SLATS) maps the extent of all *wooded vegetation* regardless of tree height or density. SLATS also identifies *woody vegetation*, which equates to *approximately* 20 per cent canopy cover. These two systems can differ where vegetation cover is less dense (~ 20 per cent) but generally match well over densely vegetated areas.
  - The Department compared land clearing estimates with SLATS data and variations between these systems can be explained as below.
    - The accounting rules between the two systems vary. For example, timber harvesting is included in SLATS estimates, whereas the national inventory monitors such temporary destocking events and only reports them as clearing if they are not re-planted after 8 years.

- SLATS reports previously missed clearing in the year it was detected, sometimes a few years after the clearing event, whereas the national inventory reports clearing events in the year the image was acquired.
  - The two systems use Landsat images acquired on different dates and also the reporting periods differ.
  - SLATS annualises land clearing data. For example, if the analysis period is less than or greater than a year, land clearing data is adjusted upward or downward to calculate annual clearing rate. This is not the case with the national data.
  - The national inventory uses Landsat data at 625 sq m pixel resolution for the entire time series, whereas SLATS estimates are based on a 625 sq m pixel for the years up to 2011-12 and 900 sq m pixel from 2012-13 onwards.
2. The Department has compared the differences between the two systems in terms of land clearing estimates as noted above, but did not compare modelling of emissions between the two systems. However, the Department understands that SLATS emissions calculations are based solely on cleared biomass, whereas the national inventory carbon accounting system estimates emissions and removals from all carbon pools – above and below ground biomass, dead organic matter and soil.
  3. FullCAM has a long history of development, calibration, testing and operational use within and outside of the Department. The software is available free of cost from Department's website. It was developed in collaboration with CSIRO, the Australian National University and a number of leading scientific researchers and industry. There have been significant improvements to the FullCAM in the last three years based on the latest research, including outcomes from the Filling the Research Gap programme funded by the Department of Agriculture and Water Resources. These improvements are included in the 2015 public release. FullCAM outputs fully comply with strict international reporting requirements and are scrutinised annually by an international panel of experts.