

# Newcastle Community Consultative Committee on the Environment

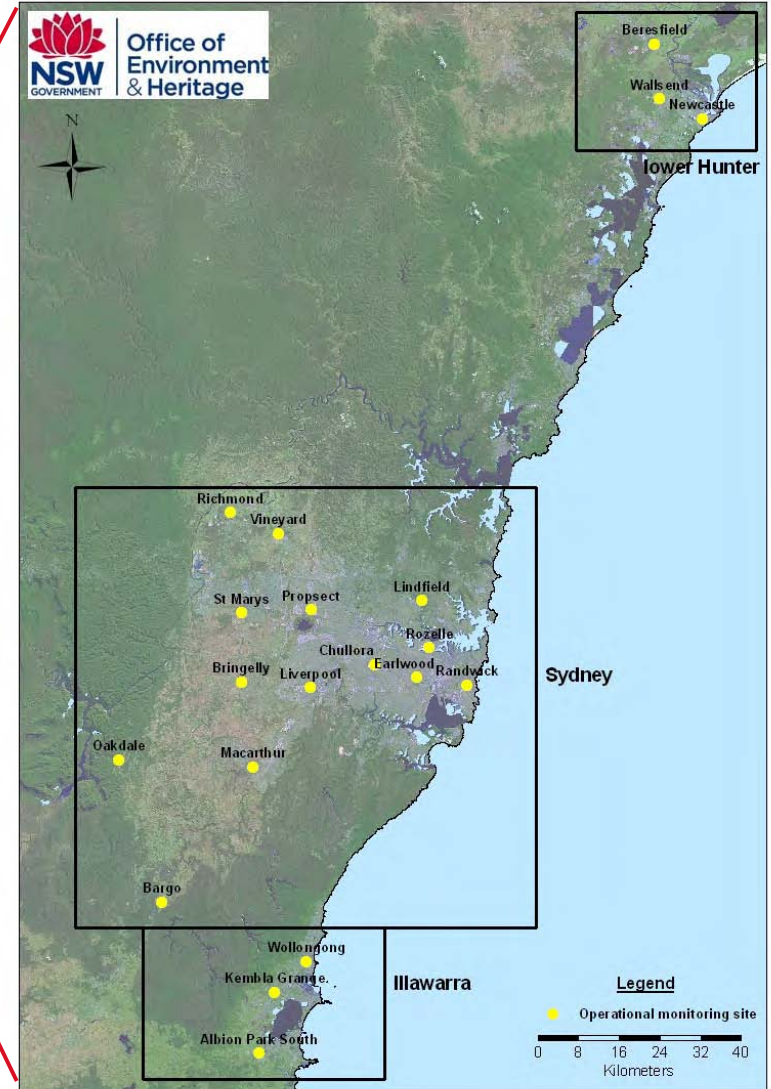
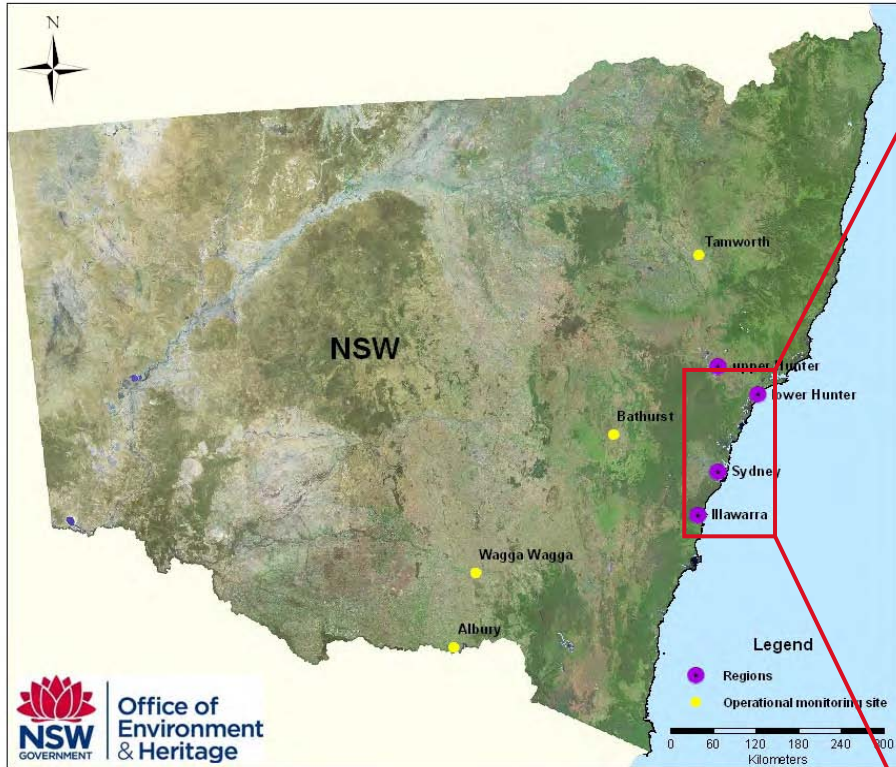
# LOWER HUNTER AIR QUALITY MONITORING NETWORK

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Science

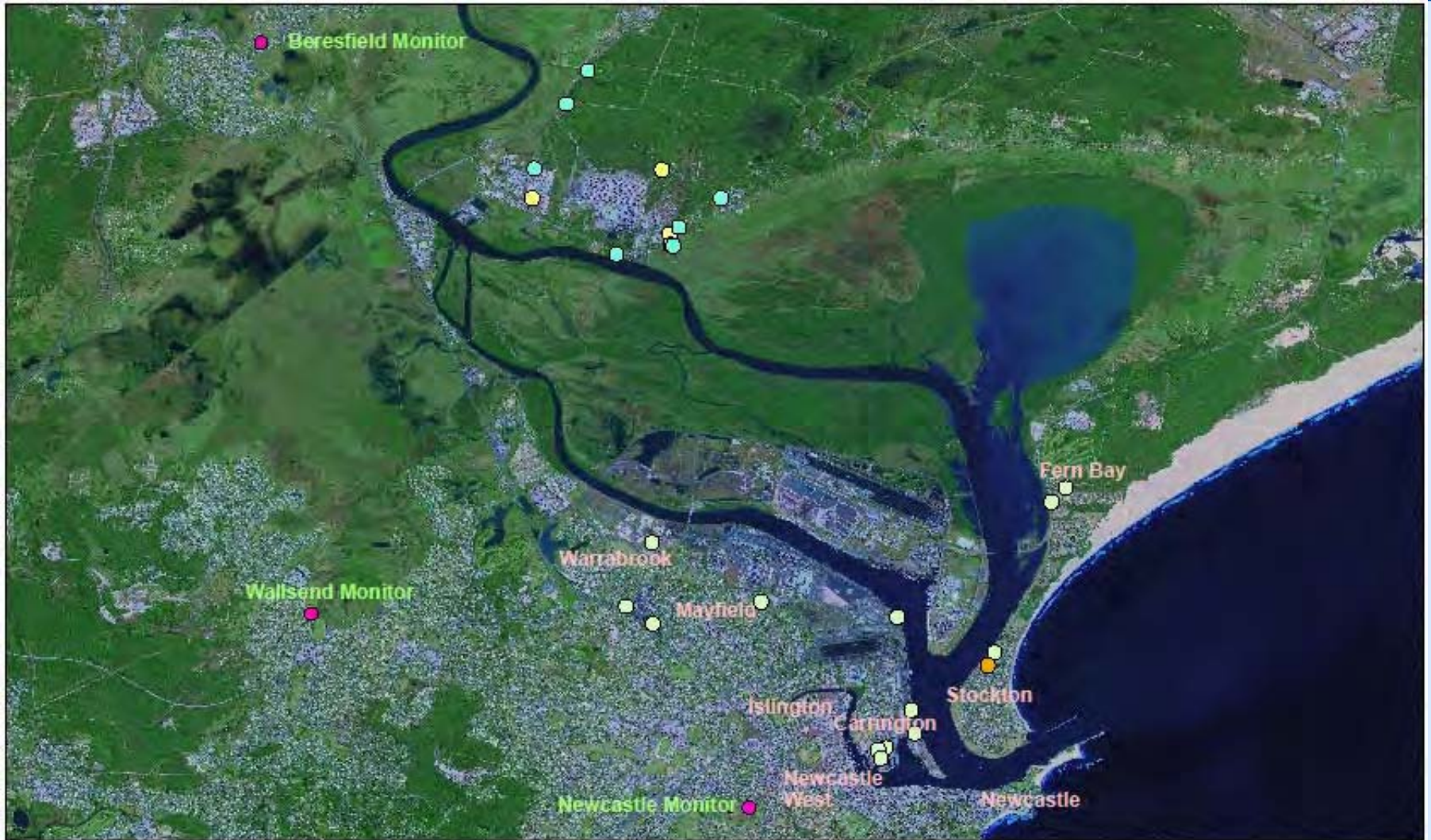
17<sup>th</sup> November 2011

# Air quality monitoring network

14 stations in Sydney, 3 in Illawarra, 3 in lower Hunter, 4 rural



\$2.7 million to run in 2011/12  
Extra 2 stations in 2012



Legend  
sp00i2p0\_nsw\_8\_2009.sowart

ROB  
Red: Band\_1  
Green: Band\_2  
Blue: Band\_3

● EPA ambient air quality monitoring site  
○ Industry - HVAS (TSP) monitoring

■ Industry ambient SO2 monitoring  
■ Industry ambient F monitoring  
● Industry ambient NOx monitoring

### Newcastle Ambient Air Quality Monitoring Sites

SPOTS satellite imagery 2009

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Scale: 1:100,000  
Datum: Projection: GDA 1984  
Printed By:  
2011  
2 November 2011

# Lower hunter air quality monitoring

- **Newcastle since February 1992**
- **Wallsend since November 1992**
- **Beresfield since may 1993**
- **Regional air quality focus**



# Ambient air quality measurements

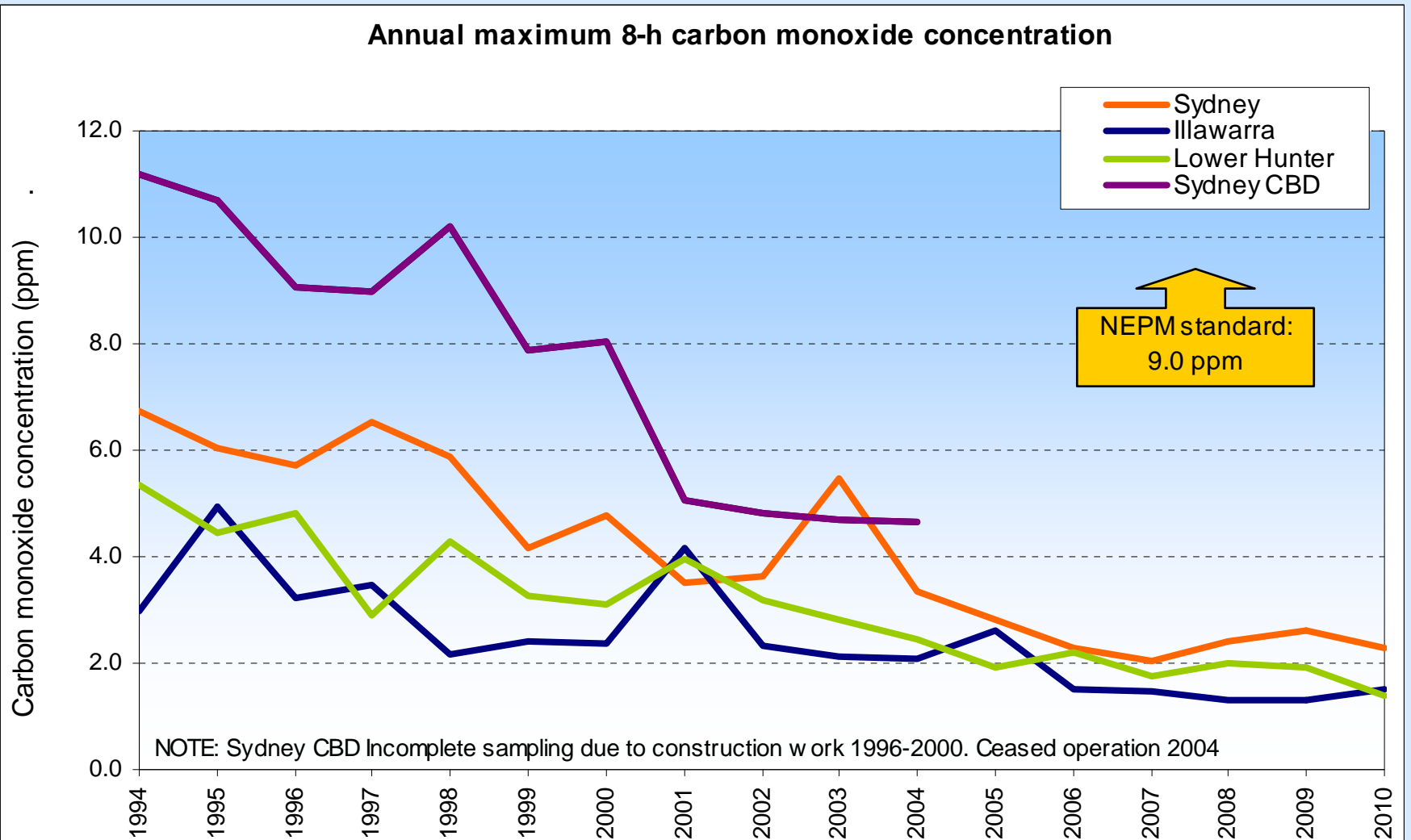
## Parameters

- Ozone
- Particles (PM<sub>10</sub>, PM<sub>2.5</sub>)
- Oxides of Nitrogen
- Carbon monoxide
- Sulfur dioxide
- Visibility
- Meteorology

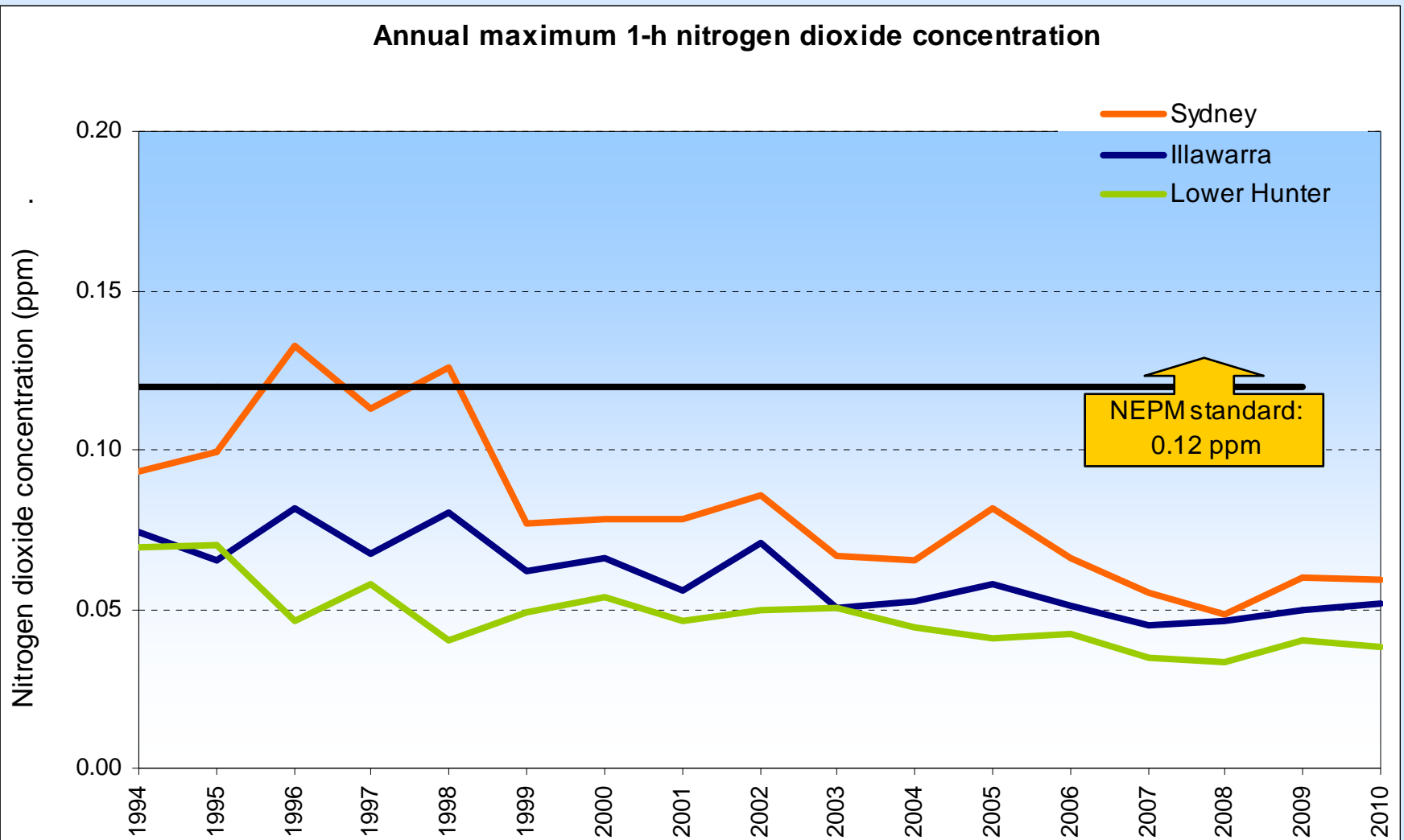
## Averaging times

- 1 hour average
- 4-hour rolling avg
- 8-hour rolling avg
- 24-hour average
- Annual average

Annual maximum 8-h carbon monoxide concentration

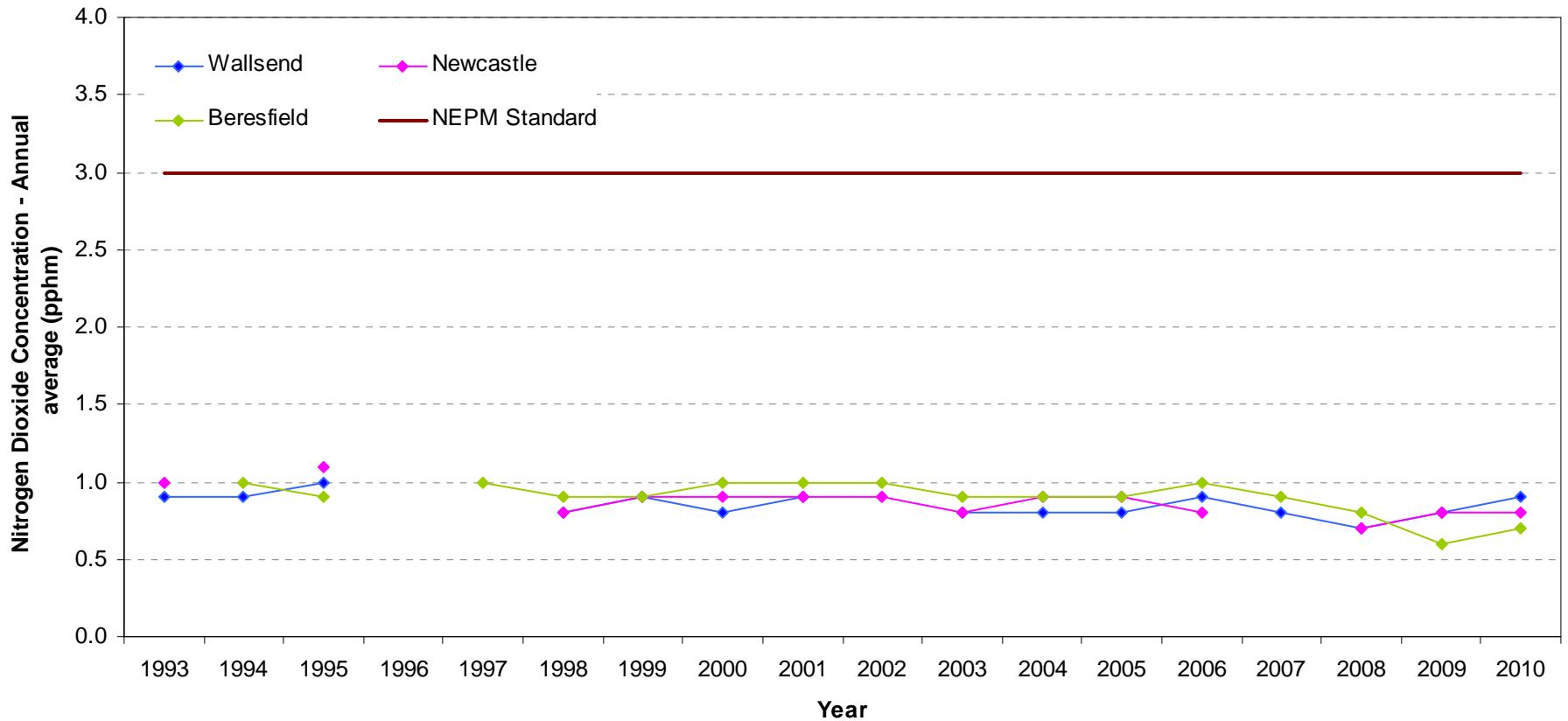


Annual maximum 1-h nitrogen dioxide concentration



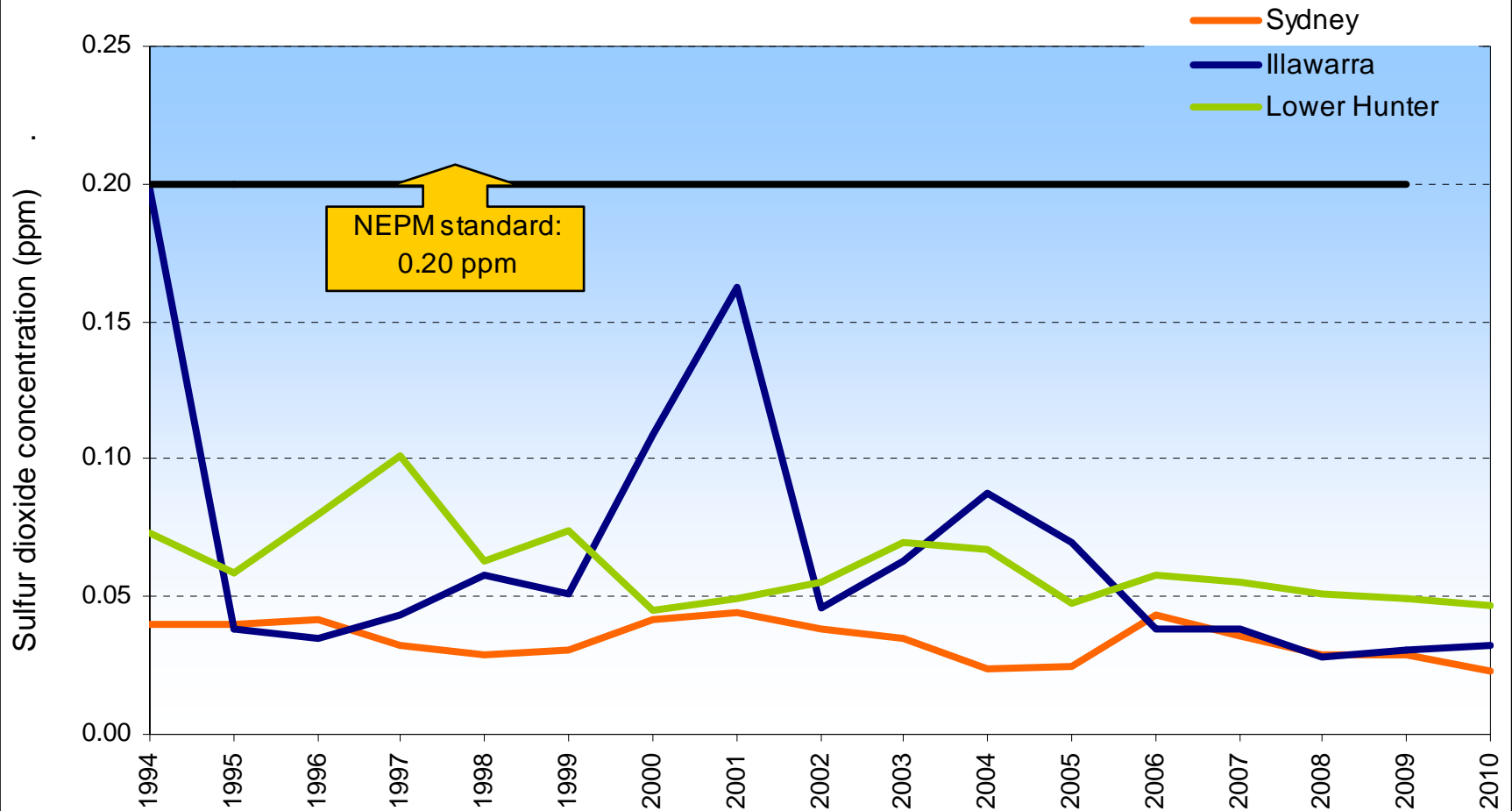


**Annual average Nitrogen Dioxide concentrations in the lower Hunter  
1994 - 2010**

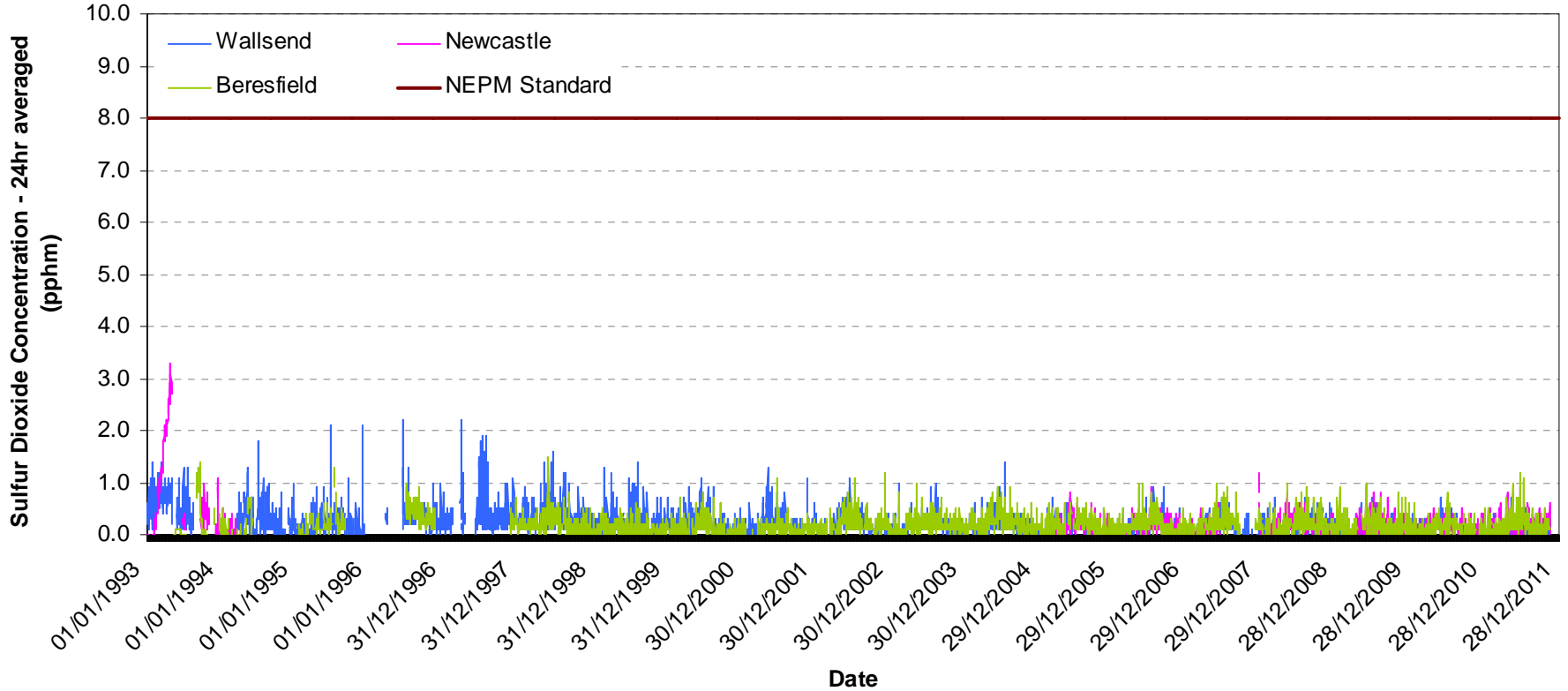


**Note: Annual averages for some years have not been calculated as they did not meet the 75% data capture requirements**

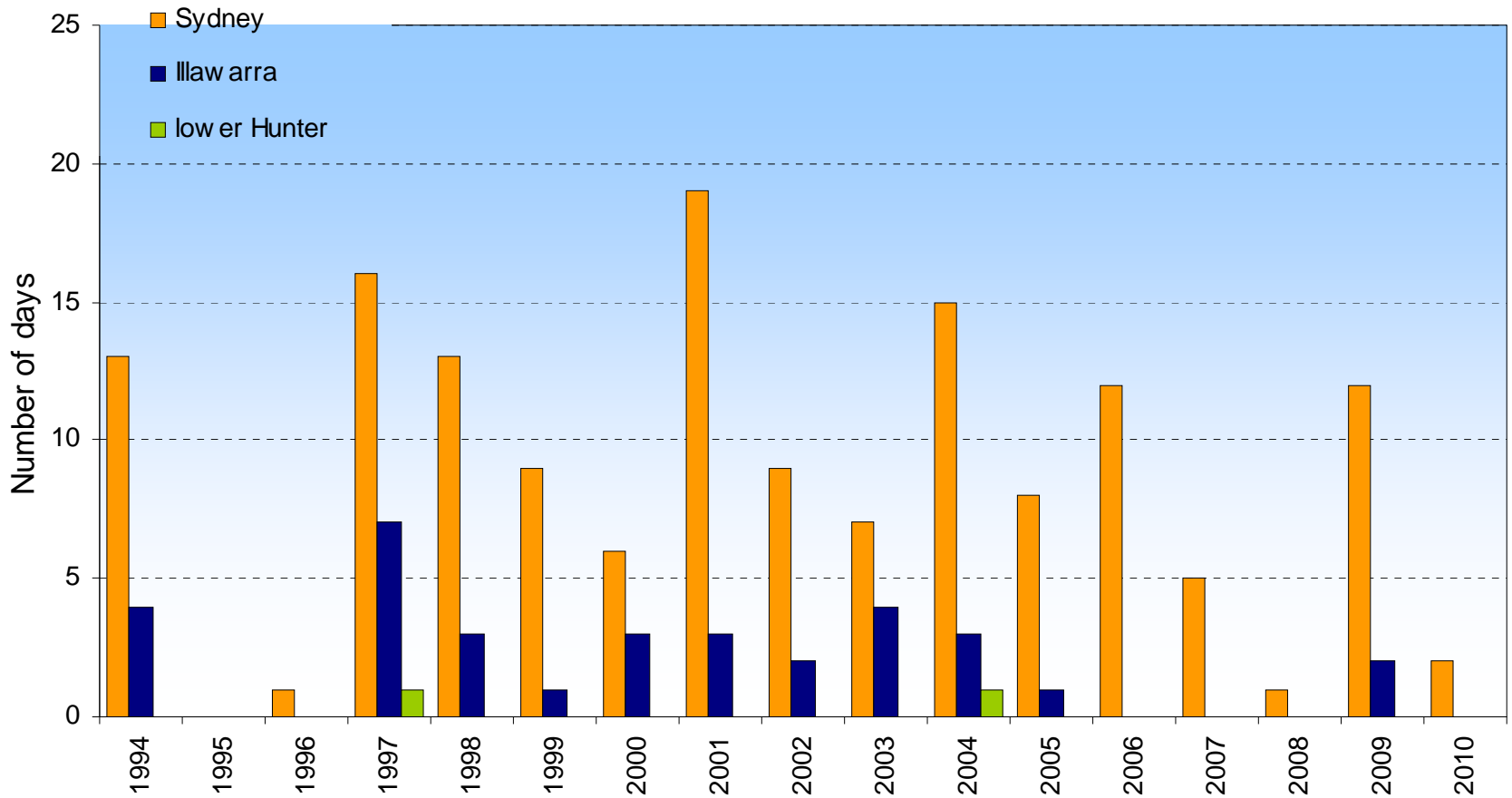
Annual maximum 1-h sulfur dioxide concentration



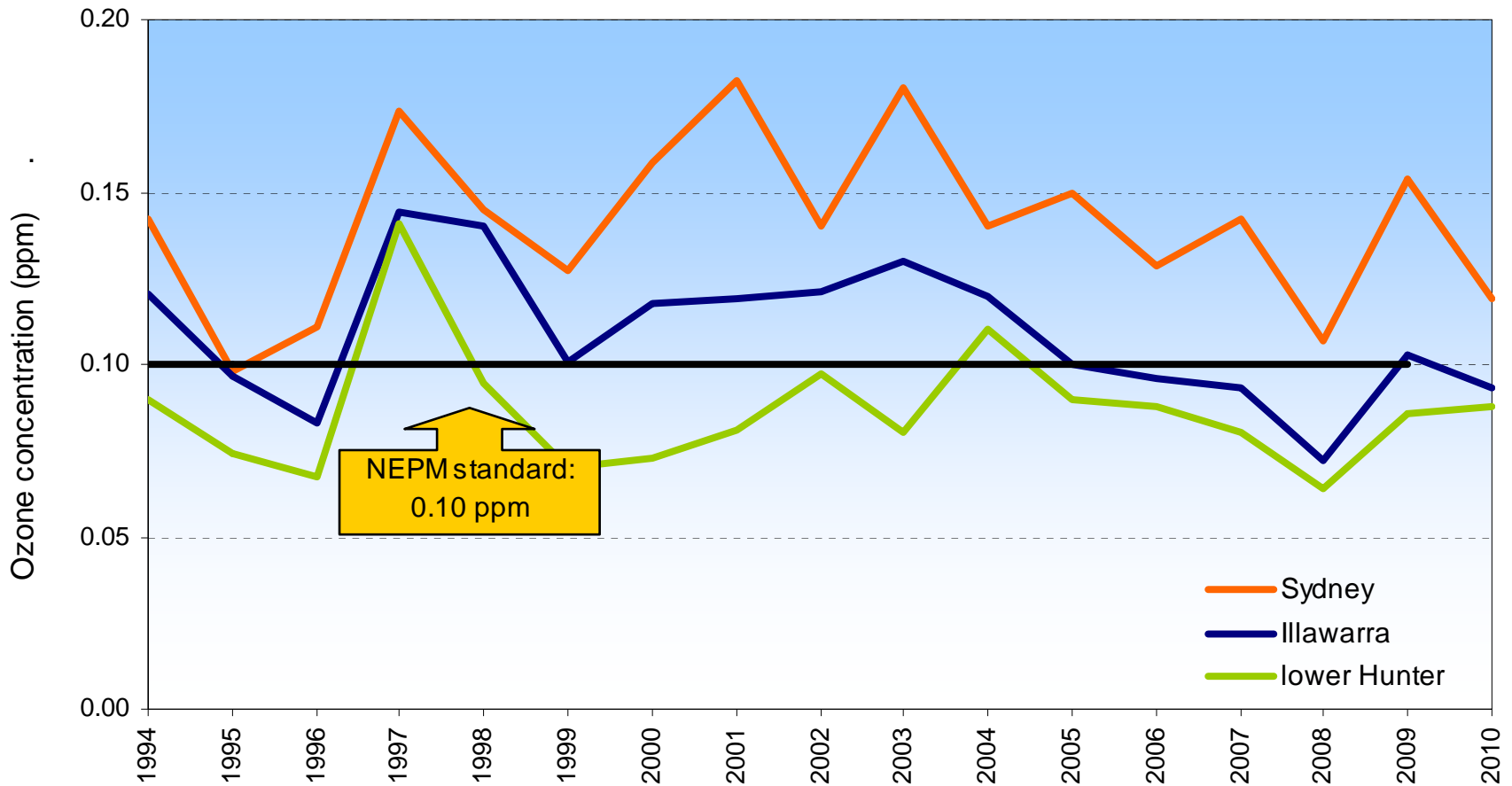
### 24 hour averaged Sulfur Dioxide concentrations in the lower Hunter 1993 - 2011



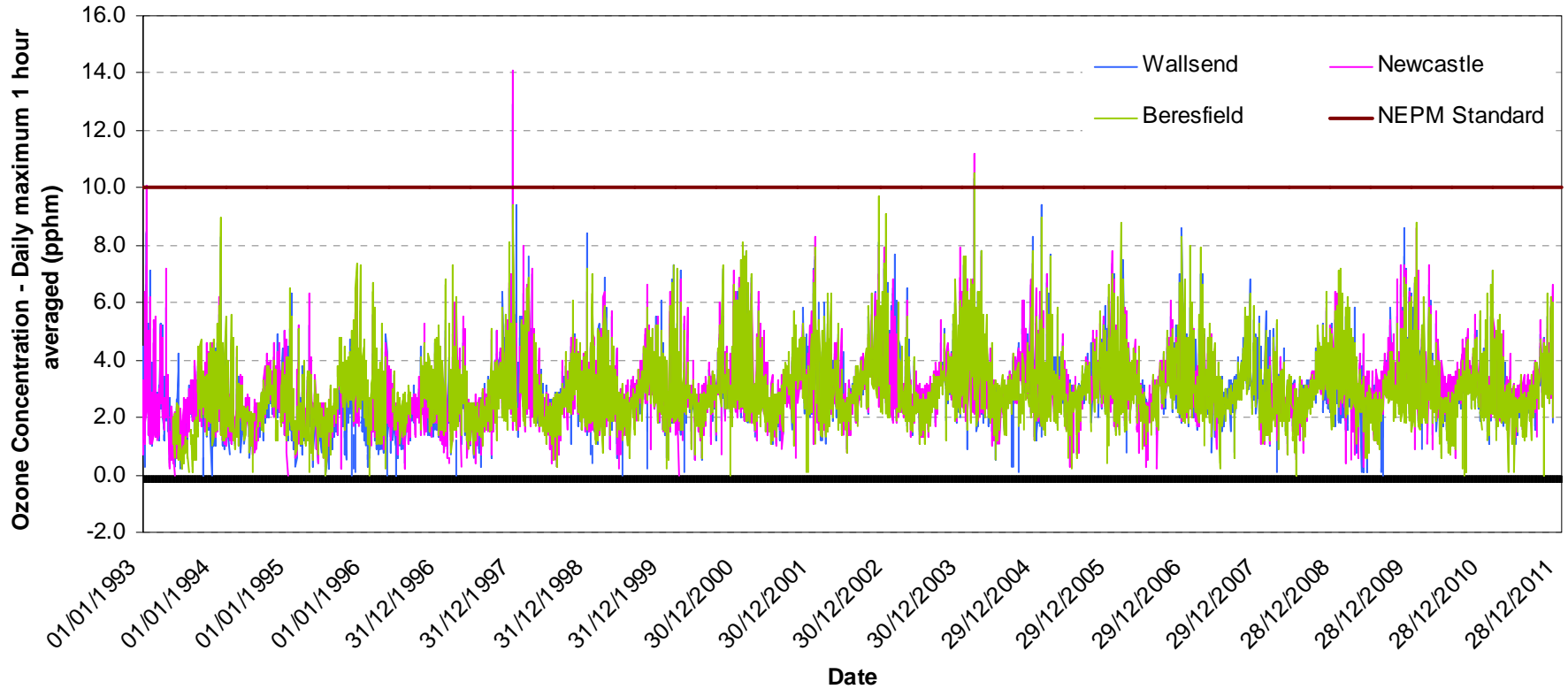
Number of days exceeding the NEPM standard for 1-hour ozone concentration



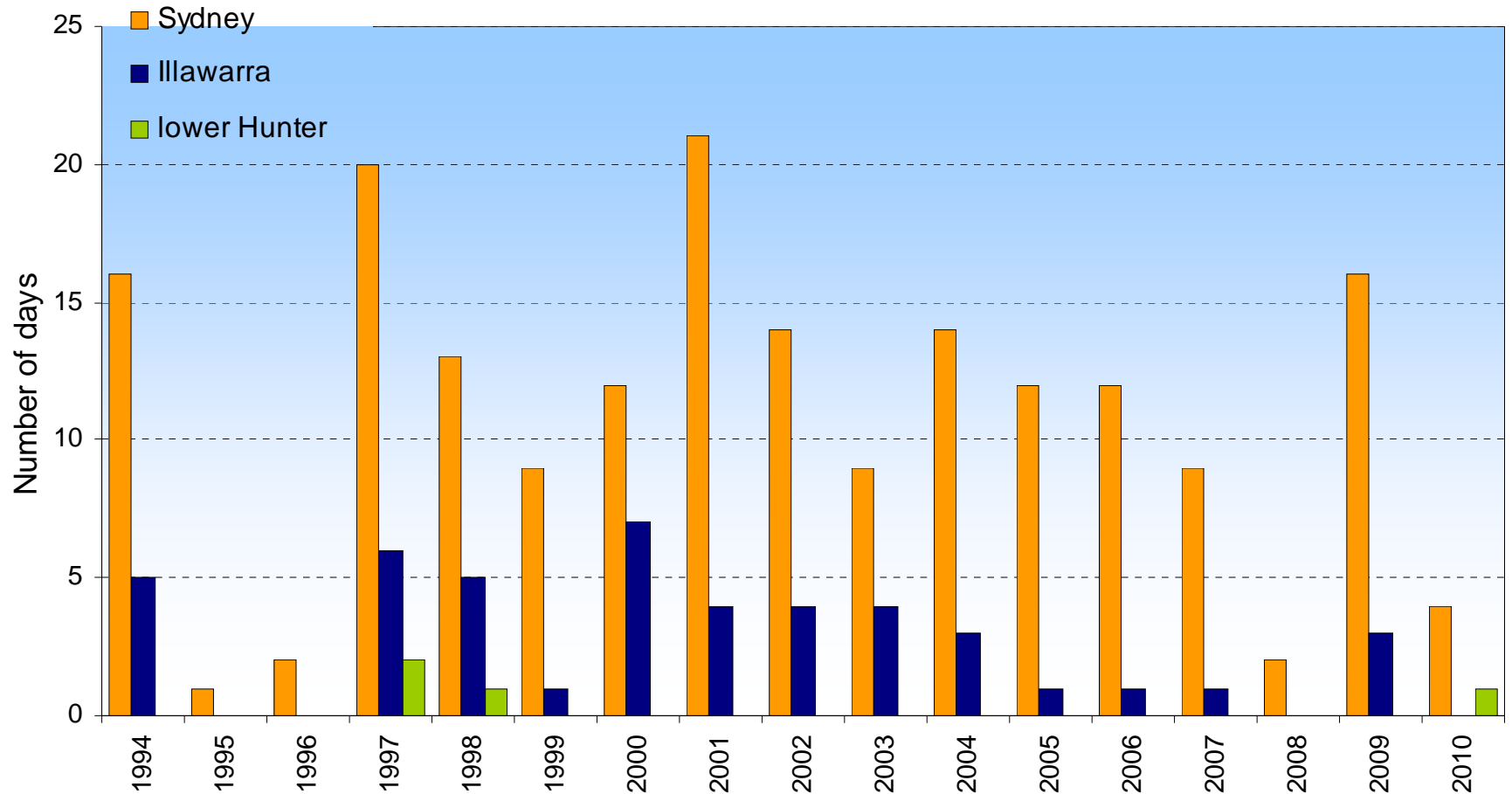
Annual maximum 1-hour ozone concentration



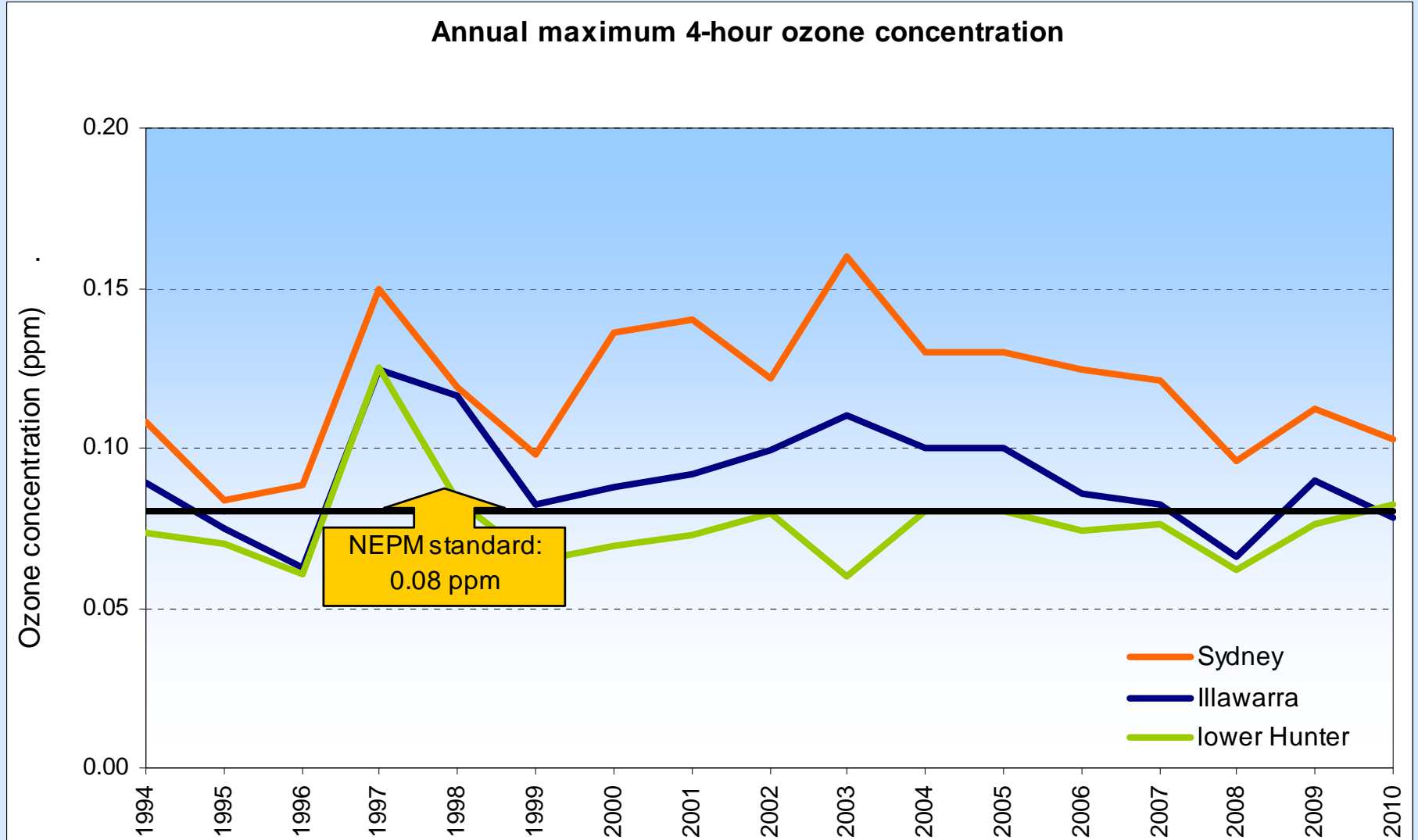
### Daily maximum 1 hour averaged Ozone concentrations in the lower Hunter 1993 - 2011



Number of days exceeding the NEPM standard for 4-hour ozone concentration

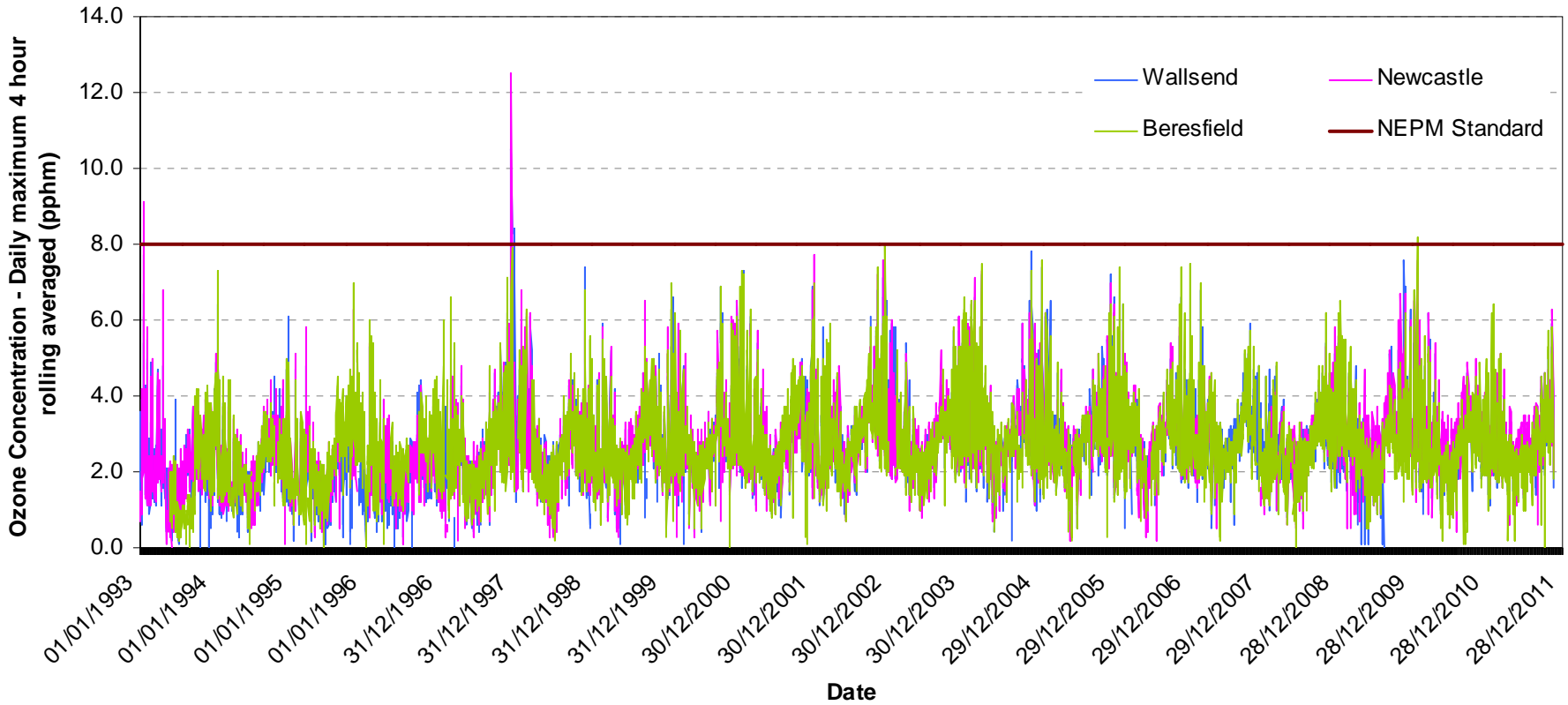


Annual maximum 4-hour ozone concentration

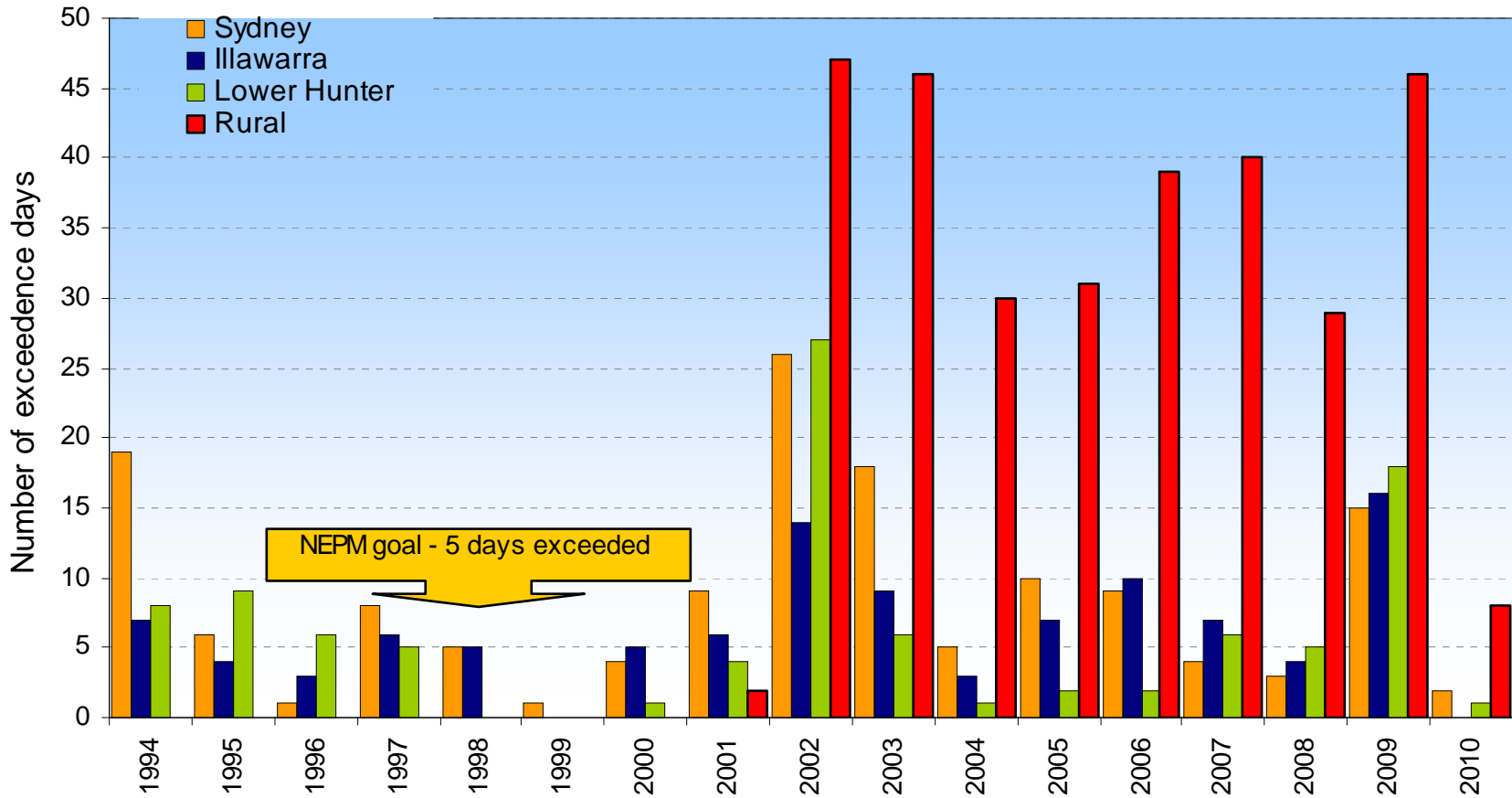




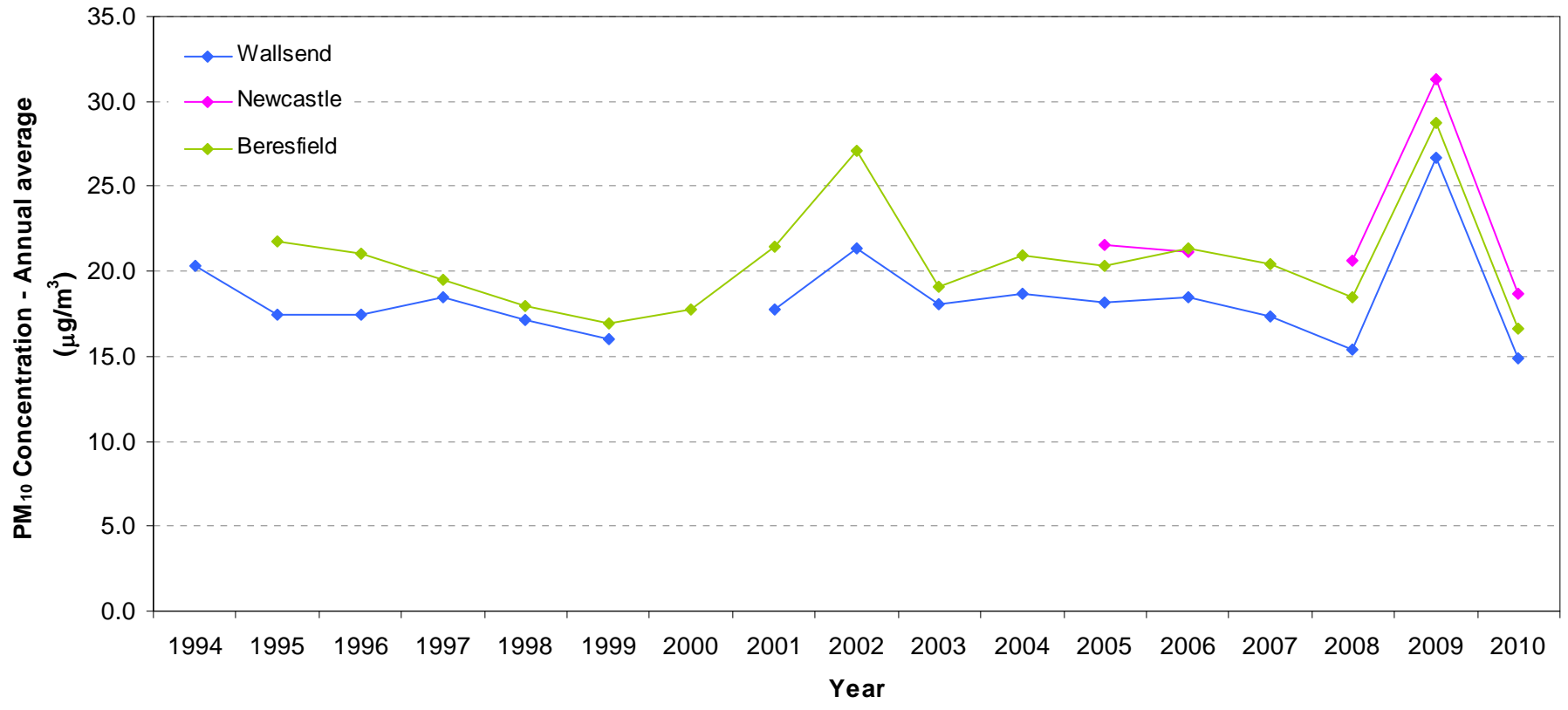
### Daily maximum 4 hour rolling averaged Ozone concentrations in the lower Hunter 1993 - 2011



Number of days exceeding the NEPM standard for 24-h PM<sub>10</sub> concentration

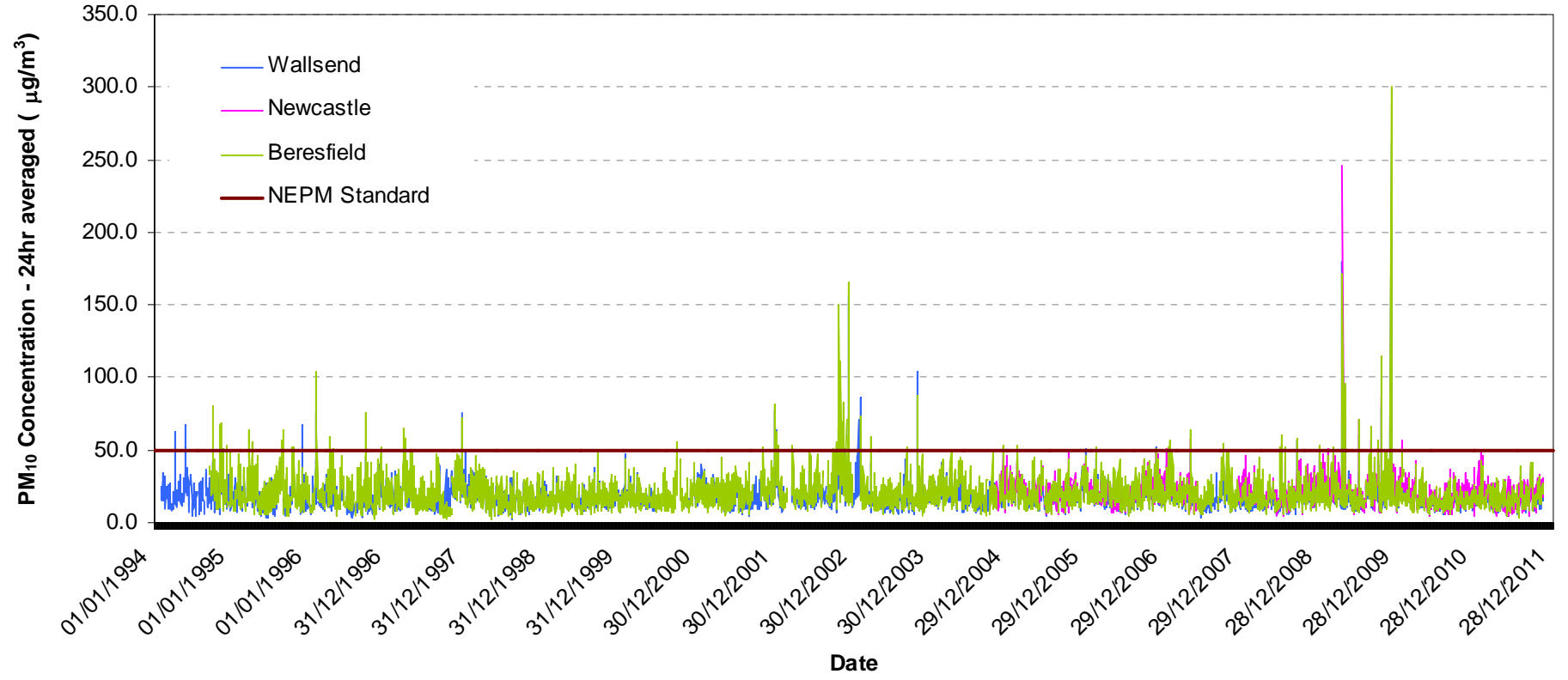


Annual average PM<sub>10</sub> concentrations in the lower Hunter  
1994 - 2010



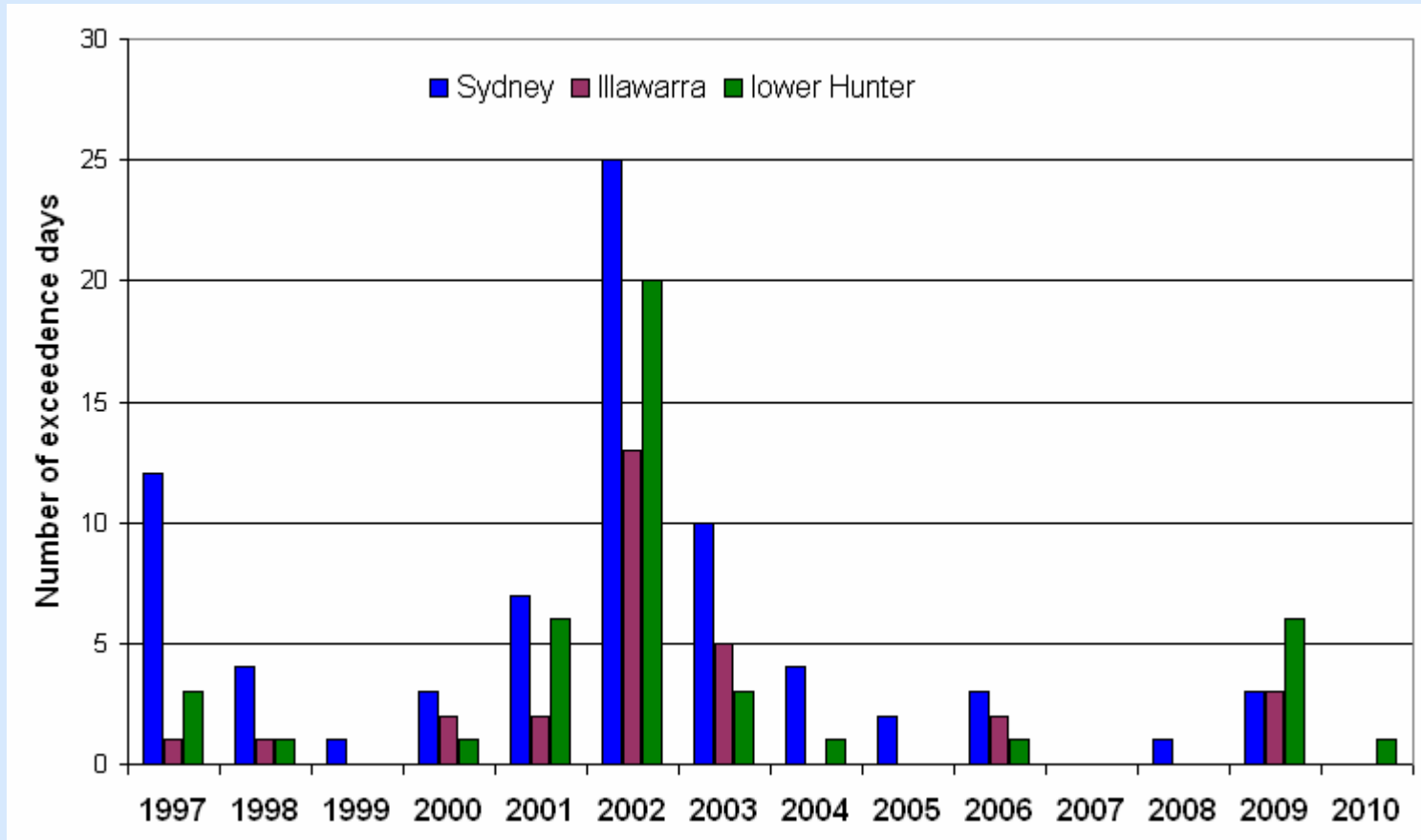
**Note: Annual averages for some years have not been calculated as they did not meet the 75% data capture requirements**

### 24 hour averaged PM<sub>10</sub> concentrations in the lower Hunter 1994 - 2011

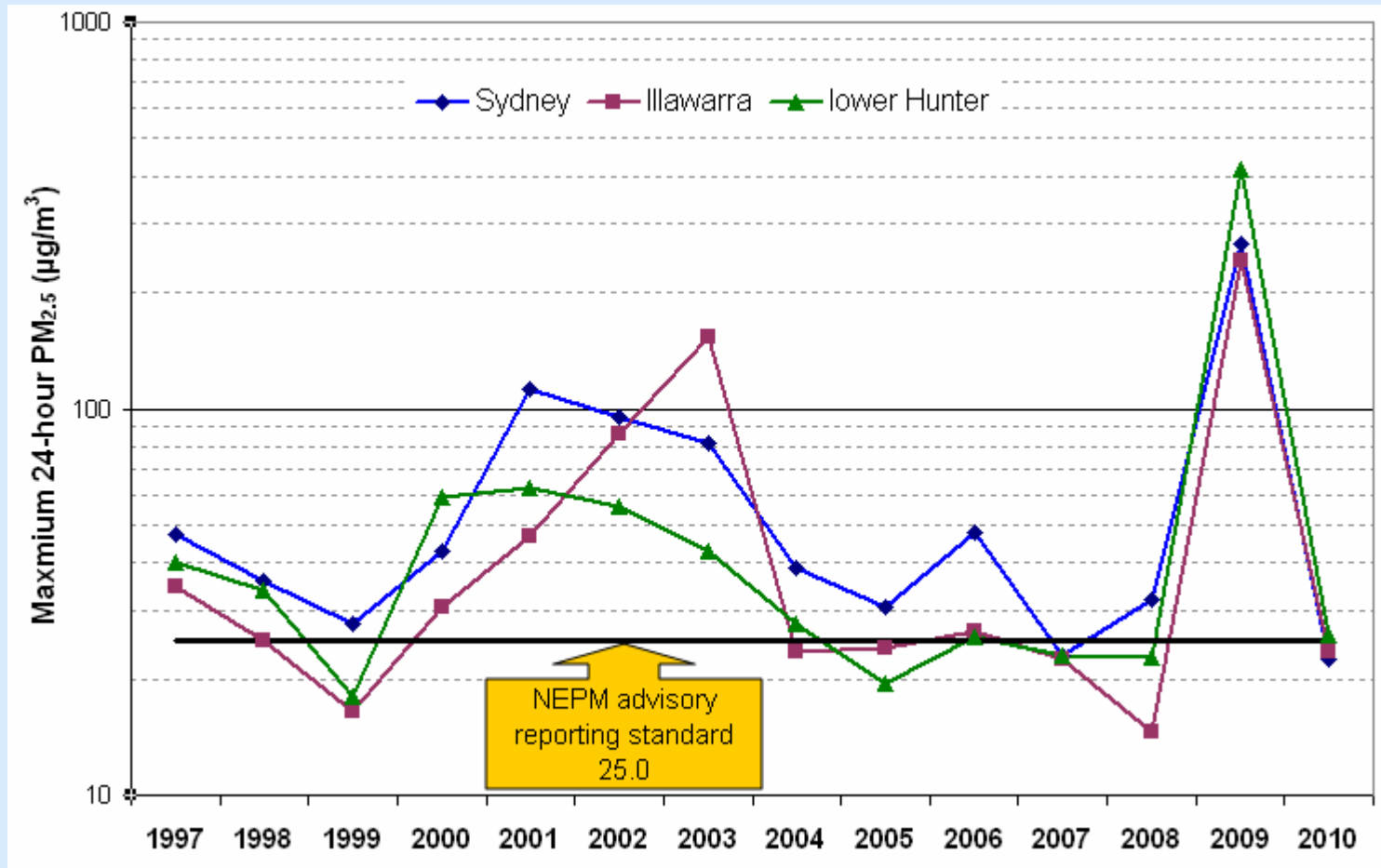


Note: September 22 - 26 2009 dust storm data has been excluded

# PM<sub>2.5</sub> days exceeding Advisory Reporting Standard

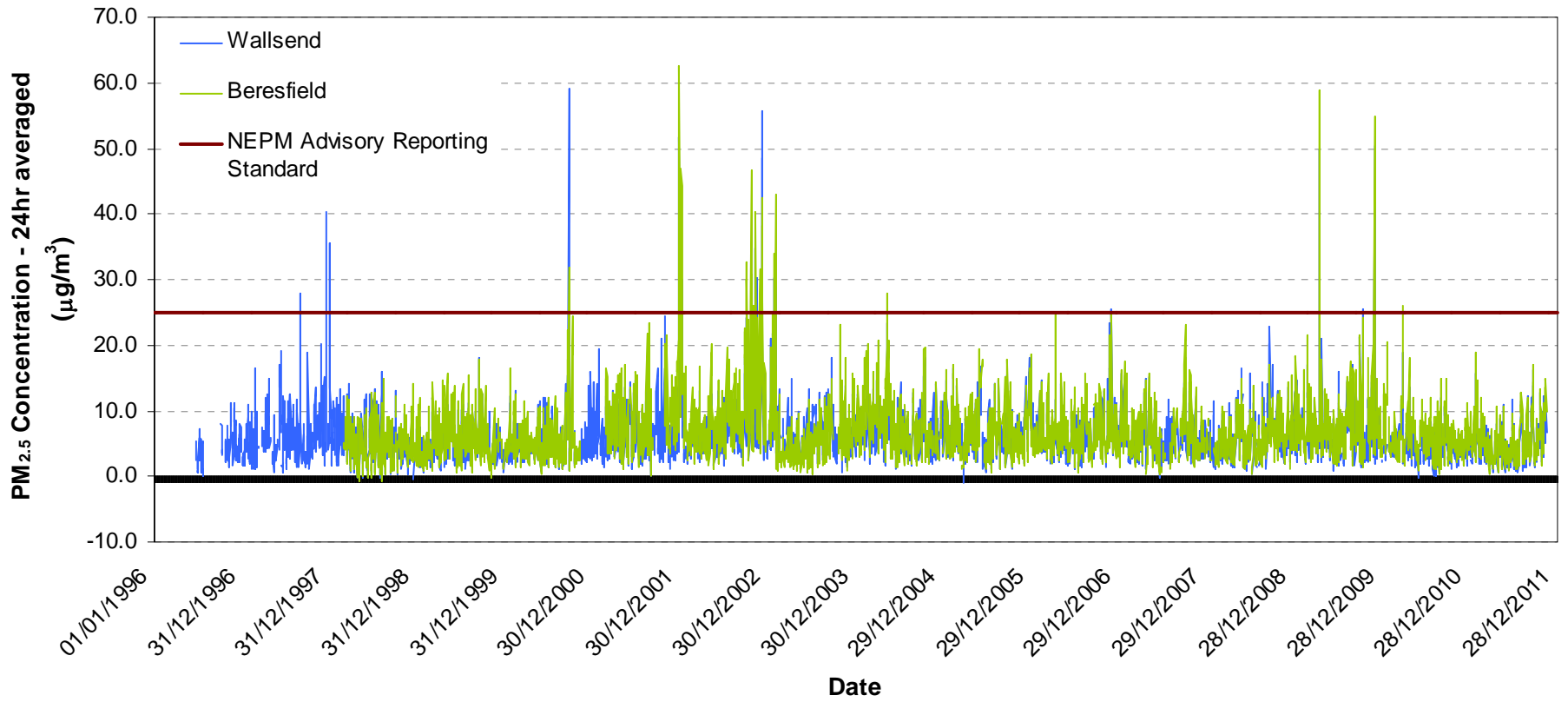


# PM<sub>2.5</sub> Maximum 24-hour Averages



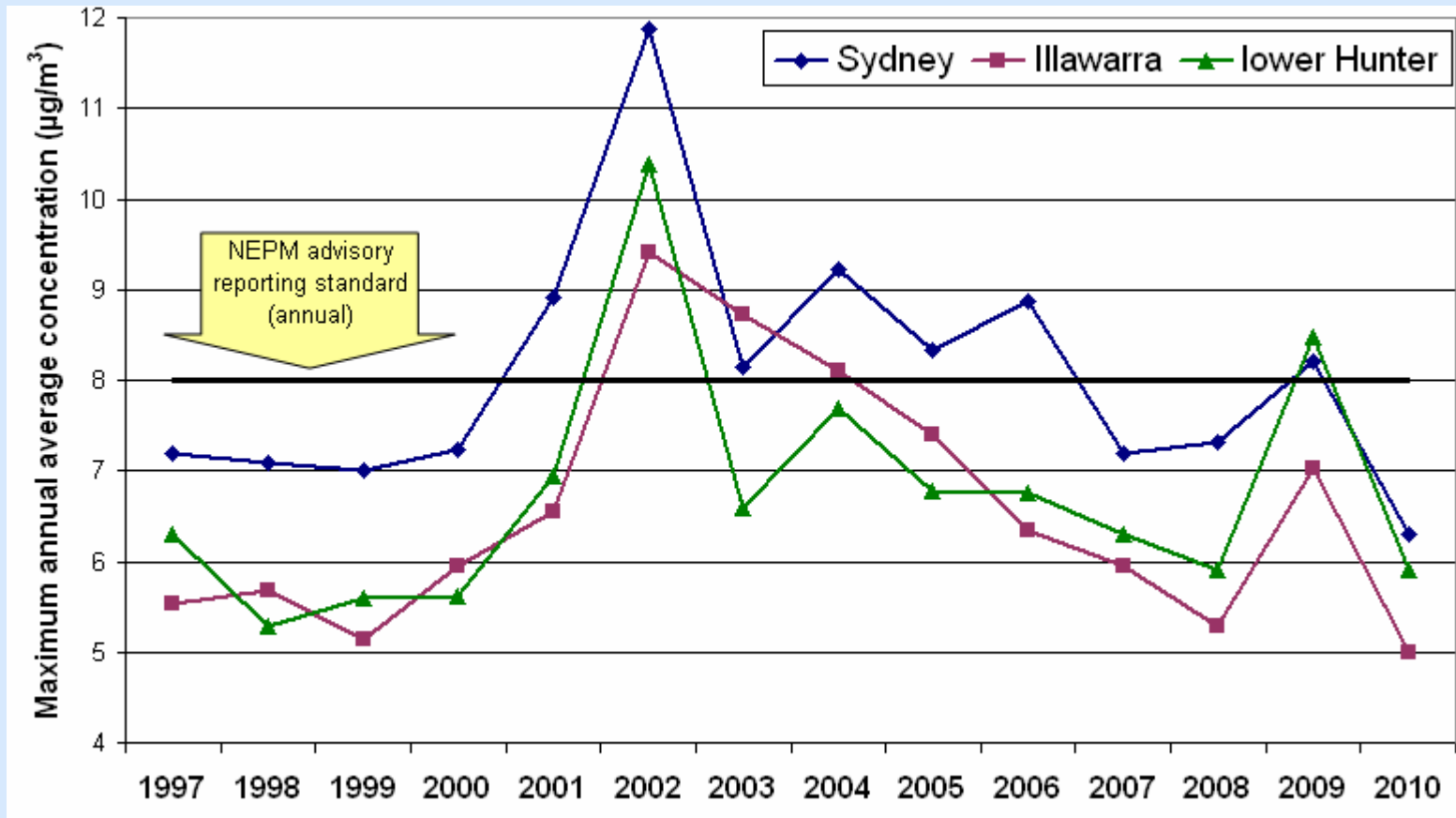
Continuous TEOM data

### 24 hour averaged PM<sub>2.5</sub> concentrations in the lower Hunter 1996 - 2011



Note: September 22 - 26 2009 dust storm data has been excluded

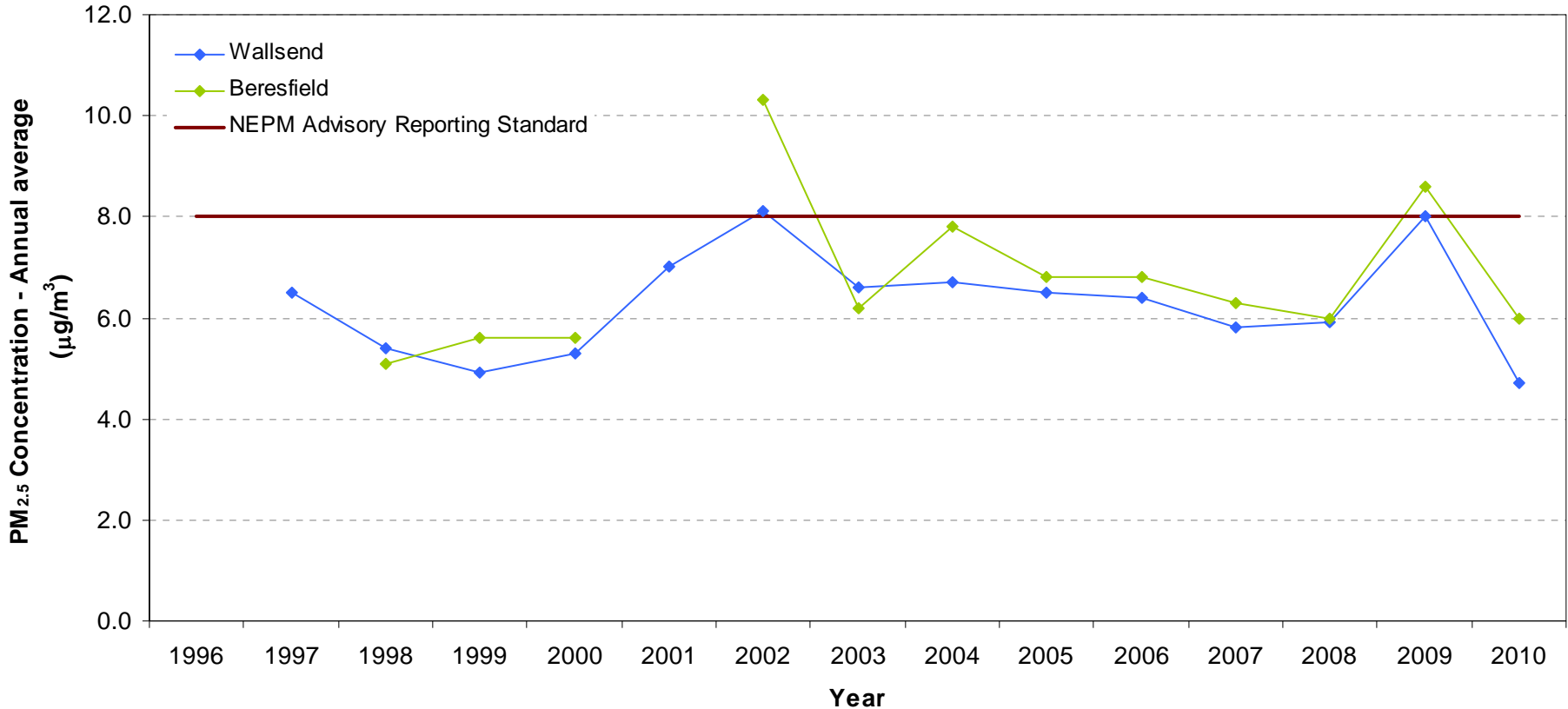
# PM<sub>2.5</sub> Annual averages



Continuous TEOM data



Annual average PM<sub>2.5</sub> concentrations in the lower Hunter  
1996 - 2010



**Note: Annual averages for some years have not been calculated as they did not meet the 75% data capture requirements**

# Summary

- **OEH lower hunter network has a regional air quality focus**
- **Regional air quality generally better than Sydney by ANEPM standards and goals**
- **Particles are still an issue but on a regional basis are driven by extreme events (e.g. bushfires HRBs, dust storms etc.**
- **Increasing need to address the impacts of increasing coal movements and other industries**

# Regional air quality trends

✓	CO	↓
✓	Lead	↓
✓	SO <sub>2</sub>	↓
✓	Ozone	—
✓	NO <sub>2</sub>	—
✓	Particles	—
✓	Air Toxics	—