3.6 Air

As all the clan groups gathered at katanyiny this is the Bibulmun name for the place where the spirit man's head was cut . And as they all stood there the spirit children were still lifting up the sky, by this time they had lifted the sky so high that it burst open, and there sitting on the horizon was the sun. The bright stabbing light caused the Coolbardies to break out in song, and spread out their wings to absorb the vivid bright light as they attempted to protect the eyes of the little children.

As this point the first hint of wind came and took away all the sprits and everything became real.

Aspirational Target: Improve air quality to ensure healthy ecosystems.

3.6.1 Resource Description

For the purpose of the Strategy, air is described as the surrounding outside air that is found within the Region. Air quality refers to the condition of the air we breathe compared to measured acceptable guidelines such as the National Environmental Protection Measure (NEPM) Guidelines. Pollution of air occurs when there is a presence of a contaminant or polluting substance that does not disperse. Subsequently it causes interference with human health or welfare, or produces other harmful environmental effects (Department of Environmental Protection, 2000). The inter-relationships between land, water, biodiversity, air and sustainable management must also be remembered when considering any natural resource asset.

Air quality of the Region is a function of the geographic formations, population pressure, management practices and behaviours in the urban and semi-rural areas. Air quality in the Region is also directly impacted by land management practices from other regions (eg fire management regimes and agricultural practices). Table 13 identifies the environmental, economic and social values of air derived from the community consultation and stakeholder engagement process.

Table 13: Air resource asset values

Environmental	Economic	Social
• Maintains life support systems • Supports all life • Maintains biodiversity • Local air quality	• Promotion of sustainable industry • Savings in the cost of remediation eg health and infrastructure • Agricultural production • Water quality and quantity • Energy efficiency • Tourism	• Protection of human health and ecosystems • Improved quality of life • Visual amenity • No odour • Lifestyle • Tourism

3.6.2 Resource Condition

The Air Quality in Perth 1992-1999 report (Department of Environmental Protection, 2001) has confirmed that the median levels of photochemical smog (ozone) in Perth during summer are tending to remain higher, with occasional breaches of National and international standards and guidelines. Further, airborne particle (haze) levels in winter are relatively high, and during spring and summer are relatively low, while background levels of ozone are increasing.

These results indicate that air quality in the Region is currently unsatisfactory for relatively short periods of time each year. In most cases these episodes of unacceptable air quality are influenced by weather patterns that inhibit air pollutants from dispersing quickly (Department of Environmental Protection, 2002).

A State of Knowledge report (Department of Environmental Protection, 2000) highlights that there are many pollutant sources, including industry contaminants, motor vehicles and wood heaters. The management of the main sources of these pollutants is therefore essential to prevent further degradation of air quality in the Region (Department of Environmental Protection, 2002).

The Research on Health and Air Pollution in Perth, Morbidity and Mortality Study (Department of Environment, 2003) proves that there is a significant link between increases in air pollution and increases in the number of deaths and hospital visits for asthma, pneumonia and other respiratory diseases. The link was especially evident during the winter of 2003 when a daily average of 31 people – mostly children or the elderly – were hospitalised with respiratory problems.

Appendix 15 provides a summary of the major pollutants in the Region's air. It includes a comparison between air quality in the Region and the National Environmental Protection Measure (NEPM) ambient air quality standards. The sites for monitoring ambient air quality in Perth under the Perth AQMP are identified in Figure 29. The parameters monitored include carbon monoxide, nitrogen dioxide, photochemical oxidants, sulphur dioxide, lead and inhaleable particles (PM 10) (Department of Environmental Protection, 2000).

Air quality is acknowledged as economically important due to its effects on the health of the population and its importance to primary production (ie photosynthesis and respiration). Air quality has an impact on lifestyle and is important for industries such as tourism (Table 13).

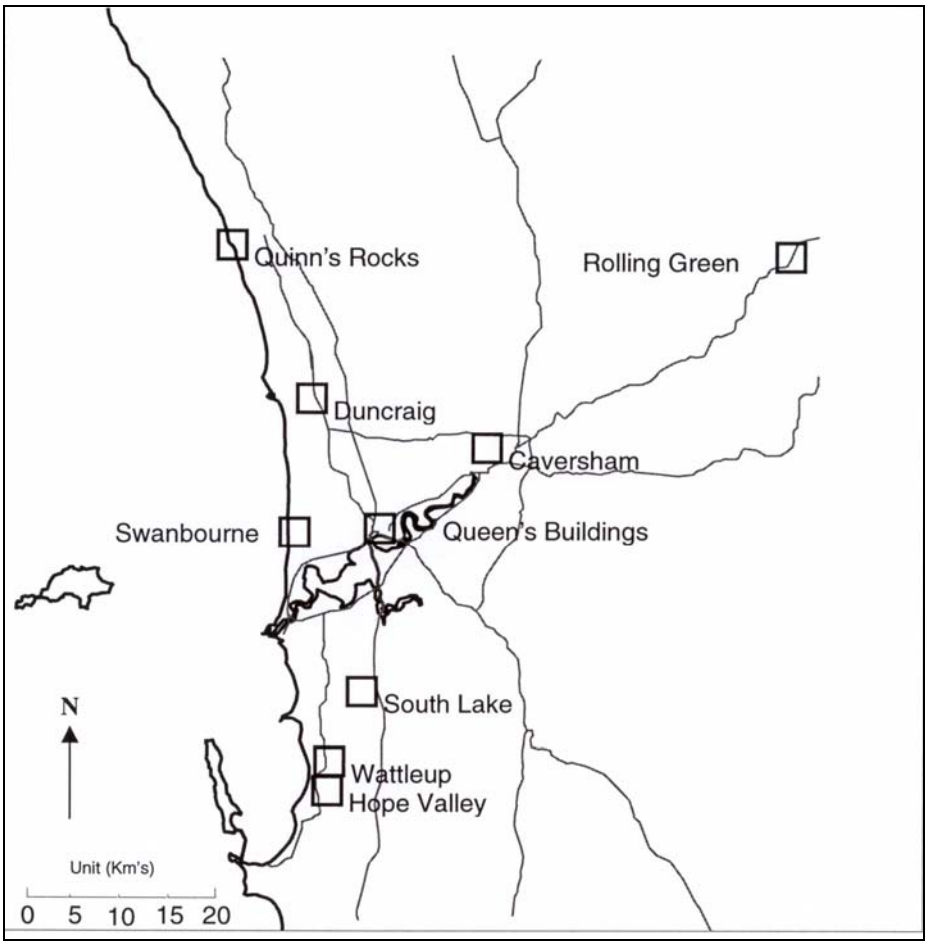

Figure 29: Perth ambient air quality monitoring sites (Map courtesy Department of Environment)

3.6.3 Issues and Pressures

If the trends of declining air quality identified in the Air Quality in Perth 1992-1999 Report continue, there is greater potential for adverse affects on human health, in particular, an increase in asthma, respiratory illness and premature death, as well as threats to the environment (Department of Environmental Protection, 2002).

The two key air quality problems in the Region are identified as the particle pollution called 'haze' in the winter and photochemical smog in summer. The main cause of haze is domestic wood-burning heaters, though prescribed burning and accidental fires within the Swan and other regions can contribute to haze problems. Motor vehicles are the main cause of photochemical smog which is created when sunlight reacts with nitrogen dioxide and reactive organic compounds such as petrol vapours (Department of Environmental Protection, 2000). Other minor causes of smog include (Department of Environmental Protection, 2002) industrial and commercial point sources and home gas heaters and stoves.

Smog can cause irritation of the lungs, shortness of breath and coughing. Haze can cause respiratory problems not only when the haze particles lodge in the lungs, but also when chemicals attach to haze particles from the atmosphere and are absorbed into the lungs and bloodstream (Department of Environmental Protection, 2003).

Fire management techniques, including the prescribed burning of areas outside the Region and summer wildfires, also impact on the air quality of the Region. Agricultural management practices that may lead to the transportation of dust and soil particles into the Region have also been identified as a minor threat to air quality.

Small-medium sized enterprises (SME's) include a variety of businesses and industrial activities ranging from dry cleaners through to chrome plating businesses. Industrial accidents and the impact of SME's can have a cumulative effect on air quality in the Region. Though they may be short lived, industrial accidents including industrial fires, can affect air quality over a substantial area (Department of Environmental Protection, 2000).

Climate and atmospheric change is a threat to a number of assets in the Region. Weather patterns affect a range of air quality issues including the dispersion of vehicle emissions and smoke (Department of Environmental Protection, 2000). The cumulative effect of the loss of vegetation over a large area also has the potential to significantly affect air quality on a National and international scale.

3.6.4 Current Response

The Perth Air Quality Management Plan (December 2000) is a 30 year plan developed by State and Local Government, industry and the wider regional community to ensure that clean air is achieved and maintained throughout the Perth metropolitan area. The Air Quality Management Plan (AQMP) and the Perth AQMP Implementation Strategy (2002) outlines the key strategies and actions scheduled to be implemented over the next 30 years, including vehicle emission reductions, smoke management, haze campaigns and community education programs (Department of Environmental Protection, 2000). The 12 Programs of the Perth AQMP are summarised in Appendix 16. The Department of Environment (DoE) will undertake overall coordination of the implementation of the Perth AQMP.

The AQMP is supported by several scientific studies including the Kwinana Air Modelling Study (Department of Conservation and Environment, 1982), the Perth Photochemical Smog Study (Western Power Corporation & Department of Environment, 1996) and the Perth Haze Study (Department of Environmental Protection, 1996b). These studies provide a foundation for future actions to improve regional air quality.

Other Australian and State Government initiatives for air quality include:

- The Sustainable Transport Energy Program
- The Freight Network Master Plan
- National Environment Protection Measure for Ambient Air Quality
- National Environment Protection Measure for diesel vehicles
- Regulations on petrol requiring low levels of toxic components
- The Metropolitan Transport Strategy (1995) and subsidiary programs (eg Bike Ahead)
- Kwinana Atmospheric Wastes Environmental Protection Policy (1999)

The International Council for Local Environmental Initiatives (LCLEI) and the Cities for Climate Protection (CCP) program is a significant program being implemented worldwide and by Australian and WA Local Governments to set and meet greenhouse emissions reduction targets.

3.6.5 NRM Strategy Response

The NRM Strategy responses outlined below form the basis for the air asset category targets detailed in Section 4.

Through this Strategy, the Council supports the implementation of the Perth AQMP. A partnership approach with the appropriate Air Quality Coordinating Committee Working Group (AM6) will be used for implementation of the AQMP (AM5). Agreements will be established between regional NRM Groups for the management of inter-regional issues relating to air quality including fire management regimes and agricultural practices.

Initiatives identified for the Council in partnership with DoE includes undertaking an inventory of emissions from small-medium sized enterprises (SME's). It also involves raising wider regional community participation in existing air quality programs in the Region. The inventory of SME emissions will be linked to the National

Pollution Inventory, which currently does not consider unregulated, small-medium sized enterprises, and will be completed by 2008 (AM1). The potential for implementation of this inventory project, in partnership with the Swan Region Light Industry Working Group (formerly the Swan Canning Industry Working Group), will be investigated.

Wider regional community participation in existing air quality programs will be increased through promotion and active partnerships with key stakeholders within the Region (AM 4). This includes wider regional community education programs that raise awareness of the impact of domestic wood heaters and the TravelSmart program

A working group will be established to report back to DoE on an as needs basis. The role of this working group will include information transfer and reporting on outcomes and will further establish the relationship between the Council and the lead agencies implementing the Perth AQMP. Analysis of baseline trend information will enable the setting of Resource Condition Targets consistent with the National Frameworks for Standards and Targets and associated processes.

3.6.6 Trade-offs

The primary trade-offs will be that negotiations need to be entered into between the Government and the wider regional community to confirm who will pay for replacing woodheaters with an alternative, cleaner heating choice. Negotiations will be required to encourage industry to use best practice and cleaner technologies and larger industries will need to be regulated through licences.

Further investigation into the trade-offs associated with the sustainable management of natural resources will be undertaken during the community consultation process period prior to investment.