The big picture

Time to Re-Lime

Sustainable production

Productivity and profitability are usually the immediate concerns to farmers but other issues such as long-term access to markets need to be considered. Some markets insist that farming practices are sustainable—Quality Assured production systems.

Maintaining optimum soil pH by appropriate lime use is both environmentally and economically profitable and therefore sustainable.

Resource protection

Long-term prosperity will be enhanced by maintaining the quality of the soil resource. If soil acidification is untreated, the subsurface soils can become highly acidic; amelioration is difficult, expensive and long-term, all the while productivity is reduced. If pH becomes too low, clay in the soil can be dissolved and soil structural damage can be permanent.

Liming to keep topsoil pH above 5.5 and subsurface pH above 4.8 will treat on-going soil acidification due to farming and allow sufficient alkalinity to move down the soil profile to treat subsurface acidification.

Where soil is acid and plant growth is reduced, the susceptibility of the land to wind and water erosion is increased. Erosion can lead to loss of nutrients and soil organic matter.

Off-site impacts

Soil acidity has effects reaching far beyond the farm gate. Most of these effects stem from reduced plant growth, leading to less stable soil and poor plant cover (increased run-off and erosion) and reduced uptake of nutrients and water.

Streams and rivers

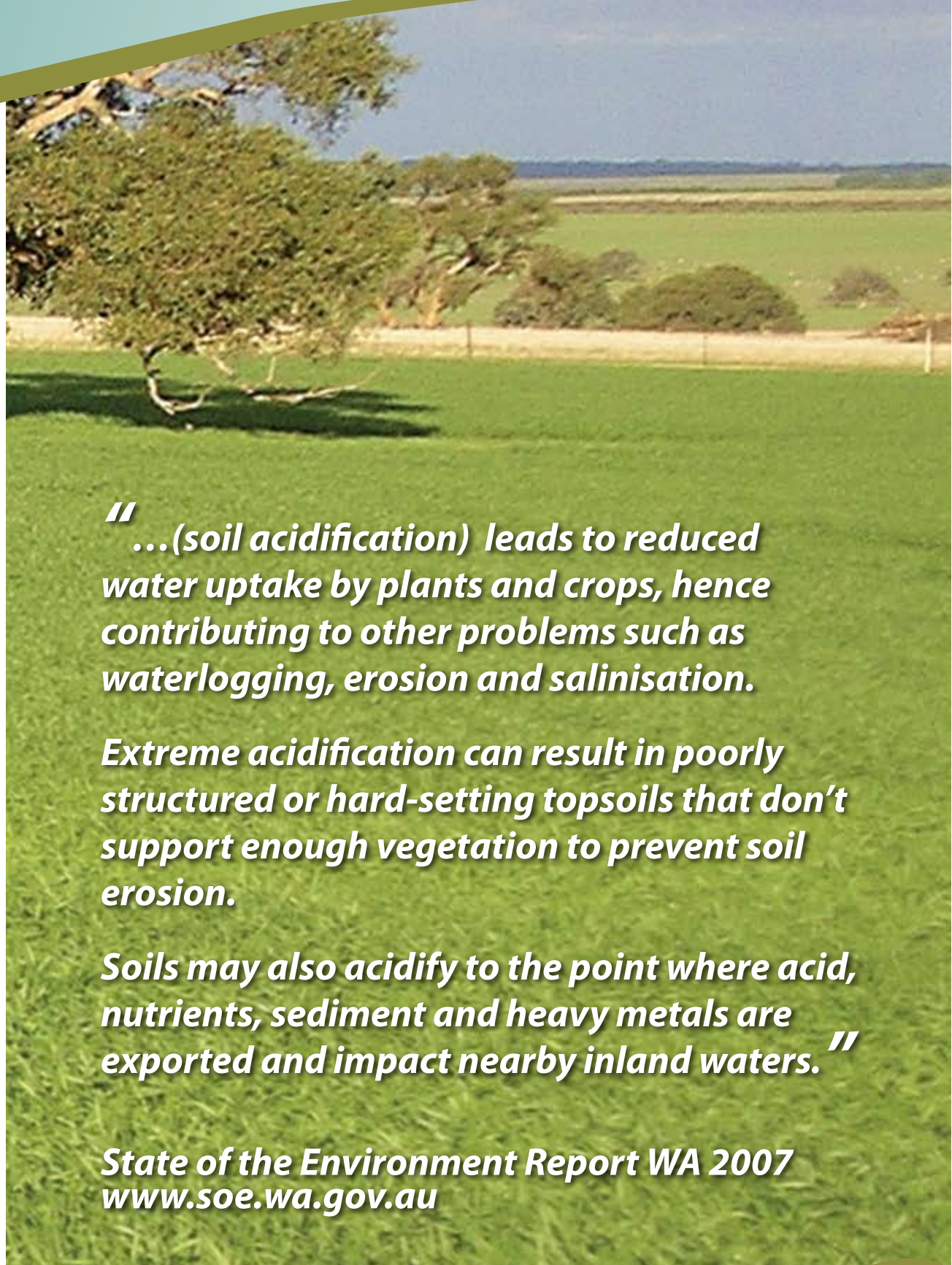
Sedimentation (from eroded soil) and eutrophication (increased nutrients, algal blooms) of streams degrade the quality of the environment. This can result in a reduction in species abundance and diversity of the aquatic life, particularly if it is an on-going problem. Degradation of streams and rivers from these impacts can be long-term and have a wide ecological effect as well as reducing aesthetic value.

Ground water

Ground water is an important natural resource in WA and can be polluted by leaching of nutrients. More nutrients are leached when acid soil restricts root growth and therefore nutrient uptake.

Dryland salinity

Salinity can result from insufficient water usage, which is a greater problem if root growth is restricted and the roots are unable to access moisture deeper in the soil profile. When deep-rooted species are unrestricted in growth, salts remain deeper in the soil and are not problematic.



"…(soil acidification) leads to reduced water uptake by plants and crops, hence contributing to other problems such as waterlogging, erosion and salinisation.

Extreme acidification can result in poorly structured or hard-setting topsoils that don't support enough vegetation to prevent soil erosion.

Soils may also acidify to the point where acid, nutrients, sediment and heavy metals are exported and impact nearby inland waters."

State of the Environment Report WA 2007
www.soe.wa.gov.au

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The Avon Catchment Council has set a target pH_{CaCl_2} of 5.5 for topsoils and 4.8 for subsurface soils in the Avon River Basin by 2020.

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AVON CATCHMENT COUNCIL
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