

## TECHNICAL NOTE

### **Saltlakes**

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25/4/08

There seems to be a local mindset that saltlakes are sterile and lifeless places. This might be an attractive picture, but it's not true. Insisting that it is, even implying it (e.g. by treating saltlakes as rubbish tips or chemical waste dumps) shows up the catchment group as ill-informed and environmental vandals. Furthermore, it's an attitude that can be guaranteed to get up the nose of those people who assess funding proposals and permit applications. In fact, I believe it's one of the main causes of the fundamental ideological conflict between Perth-based and wheatbelt-based landcare communities.

It's generally true that saltlakes, and the saline wetlands along their margins, are unsuitable for growing wheat or fattening sheep. This doesn't mean they're dead though. On the contrary, the productivity (not the *agricultural productivity*, which might be measured in bags of grain or dry sheep per hectare – and is really a measure of production – but rather *biological productivity*, which measures total living matter) can be just as high for a healthy saltlake as for adjacent farmland. But while wheat plants are large enough to handle, and even the smallest land plant can be seen with the naked eye, most of the plants and animals that teem in saltlakes are microscopic.

What's more, wheatbelt farming systems are more-or-less *annual*, i.e. the crops are sown, grow to maturity, and are harvested in a single year. Native bushland is generally a complex mixture of annual plants (like daisies) and *perennials* – plants (mostly woody ones) that live for several years, or big plants (like gum trees) that take many years just to reach maturity.

Saltlakes, on the other hand, are *ephemeral* or *episodic*. They burst into their high-productivity phase only occasionally, after episodes of lake-filling rain. This initial flush of runoff water is fairly fresh, but as the lake dries, the water becomes progressively saltier. Eventually, the lake dries out completely. So, whatever organisms are present

in the water column have to grow to maturity and reproduce in the few weeks or months before the lake becomes too salty or dries up altogether.

When the lake dries, many of the inhabitants simply leave. Winged creatures, like dragonflies, fly away and live somewhere else until the lake has water in it again. Others, like crustaceans (a large group, which includes the very abundant brine-shrimp), remain as eggs underneath the salt crust. This *egg bank* is much like the *seed bank* of weeds in a paddock. It survives several months, or even years, of desiccation and extreme heat – conditions an adult wouldn't be able to cope with. It's much the same story for the microscopic algae, diatoms and bacteria. They survive in the mud as spores or other propagules until the next lake-filling event.

A dry, salt-encrusted lake may be empty for years on end. It isn't dead though – it's merely dormant.