

## Section 2: Content and knowledge base for wetlands

# The character of Australian wetlands

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### Abstract

Australia is often called the dry continent. With good rains, however, parts of the arid interior can change into large wetlands. These are ephemeral. In the coastal regions, wetlands are usually perennial. Some of these are static in extent *but* most wetlands have dynamic boundaries. Some wetlands are very big *but* vastness is not a necessary characteristic. Puddles, pools, and ponds are very small, but nonetheless wetlands.

### What are wetlands?

If you look at a map of the annual rainfall for Australia, two aspects impress: much of the rain falls in the north, the east, the southeast, and the southwest; the rest of the continent is very dry. Australia really deserves the epithet, "The Dry Continent" In comparison, the island of Tasmania is very wet. It should come as no surprise that Tasmania and the coastal regions of Australia contain most of our freshwater resources — wetlands.

What are wetlands? They are just that: areas where land and water meet. By convention, the nature of the water is either fresh or brackish; the littoral zone is excluded. What do wetlands look like? They are easy to identify. They are areas such as lakes, rivers, streams, inland seas, swamps, billabongs, lagoons, bogs, backwaters, and overflows. They may support sedges, grasses, reeds, ti-trees, rushes, saltbush, mangroves, and nipa palms. Some may be artificially constructed, but, for all purposes, are indistinguishable from the natural, although some man-made wetlands, such as sewerage farms, are new phenomena.

There is one difficulty with this easy identification. To be seen, the wetland has to be there in the first place. Permanence is not a necessary characteristic of wetlands. Heavy rain falls, a flood occurs, and land that is usually dry turns into a river, a lake, or a series of swamps. When this happens in the dry inland, the effect is dramatic: overnight giant wetlands can flash into existence. These are ephemera, but their importance is not reduced because of a short life. For wildlife they are critical. Within hours, thousands of burrowing frogs emerge to breed, freshwater crabs surface, the dormant eggs of shrimps hatch. Within days, waterbirds arrive in huge numbers to commence nesting. This is typical of all wetlands. Life is rife where land and water meet.

Towards the coast, wetlands usually are perennial, but flooding is important as well. Here, too, giant wetlands can flash into existence, but, normally, they are already there and just increase in extent, or, apparently, absorb large volumes of water without obvious change.

The sheer size of some wetlands must not mislead the observer; one should not perceive vastness as a necessary characteristic. Wetlands can be small — very small. These tend to be overlooked. Few notice a puddle, a soak, a runlet, a pond, or a patch of reeds. These are ubiquitous, but none the less important for wildlife. If you need convincing, just listen nearby on a summer's night — the chorus of frogs can be deafening.

But in all, Australia is deficient in wetlands when compared to other continents. This is reflected most noticeably in the fauna, for example, the number of species of ducks and gulls is very low. Even so, when compared to other Australian habitats such as rainforest, the fauna of wetlands is very diverse.

### Coming to terms with wetlands

The special qualities of wetlands can be better understood if the problems of preservation are considered. From the foregoing, several important characteristics can be discerned. Wetlands can be:

1. ephemeral or permanent
2. static or dynamic
3. very big to very small,

These pose special problems for preservation. Environmental managers are accustomed to dealing with habitats that have continuity in time and space — rainforests for example. Certainly a patch of rainforest can vary in extent, but the period of change can be measured in generations. Wetlands can change overnight. Sometimes they cease to exist at all.

Wetlands that are permanent and static fit the traditional mould for management, but most do not. Those that do not, can prove elusive. Their boundaries can defy the legislator's pen, and the manager's plan, but "feed" the contractor's bulldozer.

There is a typical human reaction to this difficulty. By artificial means, managers will attempt to confine elusive wetlands to limited areas and make them permanent and static. This is not necessarily a deliberate ploy. Humans favour distinct, static entities. Cognitively, we deal with them very well. And managers manage them very well. To confine, to delimit, is natural. But is the delimited wetland the same wetland that we originally intended to preserve? The answer has to be in the negative. Practically, the results can be disastrous. The variability is part of the natural life of the wetland. Confined, they tend to need intensive management. If left alone, they may be lost through benign neglect.

That wetlands can be intractable can have tragic consequences for wetlands and for people. Wetlands can be incompatible with human life and land-use. Rainforest, by comparison, could be described as an innocuous habitat. One is unlikely to wake up one morning and find the house tottering because of emerging trees, but it is possible to find the house submerging. Wetlands that can threaten life-and-limb are usually destroyed.

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Sometimes it is all but impossible to destroy a wetland. Huge size, and the magnitude of the force of the water, may be beyond human ingenuity to control. At the opposite end of the spectrum of sizes of wetlands is the puddle. These are easy to eliminate and thus easily forgotten. Small wetlands attract little attention; some would argue that they are not wetlands at all. But they are. Many of our wildlife need puddles, soaks, ponds, pools, marshes, rills, and runlets. Frogs are a good example. In cities and towns, people often lament the passing of their garden frogs. They disappear not because of the loss of the large wetlands, but because all wetlands, especially small ones, usually meet the same fate in inhabited areas — destruction. Maintenance of ample numbers of puddles, pools, and ponds would ensure breeding sites for the continued presence of the frogs.

### **Confluence**

In this essay I concentrate on the physical characteristics of wetlands. In so doing I stress their variability in time and space, and stress the rapidity with which they can vary. They wax and wane in extent and sometimes they may not be there at all. I try to warn of the dangers of perceiving all wetlands as distinct, static, entities. I also argue that wetlands can be very small, that vastness is not necessarily characteristic of them. Wetlands are just that — where land and water meet. In the dry interior of the continent, they are ephemeral, but, towards the coast, wetlands are more likely to be perennial.

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