The bountiful baler

by Alan Kendrick, John Huisman and Michael Rule

You may occasionally chance upon a weathered and broken baler shell on nearly any beach in Western Australia as these large marine shells occur around the entire coast. While a beachcomber may even find a strikingly patterned intact shell, the more observant visitor may be lucky enough to see a living specimen of these distinctive gastropods in any of WA's oceanic marine parks and reserves. These impressive shells are not uncommon in intertidal and shallow marine habitats, but may be well camouflaged with algae or partially buried in sand or muddy sediments.

Baler shells belong to the genus *Melo* and include some of the largest and most well-known species of the mollusc family Volutidae, which occur in many marine habitats around the world. Most common in the southern hemisphere, volutes are particularly diverse in Australia's coastal seas, where about a third of all known species can be found. While they occur around Australia, different baler shell species occur in the tropical north and temperate south.

WESTERN AUSTRALIA'S BALER SHELLS

Four species are currently recognised from northern Australia, where the aptly named northern baler (*Melo amphora*) is the most prevalent. This species is distributed across the north of Australia and extends down the Western Australian coast to Shark Bay. Northern balers can grow to about 50 centimetres in length with highly domed shells that may become covered in algae as they age. The distinctive straight shoulder spines on the spire are prominent on smaller individuals, but are often eroded or lost with age. Northern balers can often be seen along WA's northern coast on the extensive reefs, rock pools and tidal flats that become exposed as tides recede. Other northern species have more limited distributions, such as *Melo ashmorensis*, which was only described in 2005 and has so far been recorded only from offshore reefs of north-western Australia. In contrast, only one species, the southern baler (*Melo miltonis*) occurs in WA south of Shark Bay. This is the largest marine gastropod in coastal waters of Australia's south coast. Characteristically smaller than the northern baler, this shell rarely exceeds 35 centimetres in length and has a narrower shell with incurving spines on the spire and a strikingly patterned brown and white body. Due to the smaller tides and less extensive intertidal habitats of WA's south, southern balers are more frequently seen alive by divers.

Baler shells breed by producing a large, leathery egg-mass that is fixed to a firm structure on the seabed. The egg mass comprises about 100 capsules (each containing an embryo) joined in rows. Upon hatching, the young undergo direct development; that is they lack the pelagic or free floating larval stage common to many molluscs and move from the egg directly to the seabed when they are

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about 2.5 centimetres in length. (See also 'Understanding marine 'connectivity'', *LANDSCOPE*, Winter 2016.) One consequence of this lack of dispersion is that genetic mixing between populations is limited, causing balers of the same species in different locations to vary considerably in their shell form and colour pattern. Interestingly, baler shells with an apparent mix of *M. amphora* and *M. miltonis* features occur where the ranges of these species overlap at Shark Bay, suggesting that the northern and southern species may hybridise at this location. All volutes are thought to be carnivores and commonly feed on other molluscs. Southern baler shells are known to feed on quite large molluscs like turban shells and abalone. Baler shells themselves have been recorded as prey consumed by tiger sharks (*Galeocerdo cuvier*) caught off the WA coast.

A LONG ASSOCIATION WITH PEOPLE

Baler shells have provided food and useful materials for Indigenous people for a very long time in Australia and more broadly across south-east Asia. The shells were formed into scrapers and adzes, spoons and containers, discs for spear-throwers and objects like pendants that had high ceremonial value. The common occurrence of baler shells in neolithic burials in the Philippines and other sites throughout the Pacific suggests that these shells were ritually important.

The long use of baler shells by Aboriginal people in WA can be seen in shell middens associated with human occupation along the coast over thousands of years, at locations like rock shelters near Monkey Mia at Shark Bay and Mandu Mandu on the Ningaloo coast. In WA's Kimberley region, baler shells were used to collect and store water, and also to mark water sources. The incongruous presence of a baler shell in the arid interior landscape would inform traditional owners or visiting people of a nearby source of water. Evidence shows that baler shell artefacts were also distributed far from the coast into central Australia along trade routes and examples have been found in the Great Sandy Desert in WA and the Flinders Range in South Australia.

So while baler shells have held value for Indigenous people throughout the region over thousands of years, today they may simply play a role in brightening up a walk along the beach or add interest to a swim, snorkel or dive.

Opposite page
Main A northern baler in shallow water at the Montebello Islands Marine Park.
Photo – Suzanne Long/Parks and Wildlife
Left A young southern baler showing its distinctively patterned body at Shoalwater Islands Marine Park.
Photo – John Huisman/Parks and Wildlife

Above left A northern baler at Long Reef, northern Kimberley.
Photo – Clay Bryce/WA Museum

Above A northern baler laying an egg mass.
Photo – Alan Kendrick/Parks and Wildlife

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