

Habitat loss puts us in extinction cliffhanger



Two baby flatback turtles: unborn sea turtles are known to call out to each other from inside their eggs and coordinate their hatching time. (AAP Image/Neda Vanovac)

Mary Gardner

Like anyone with a Leunig calendar, I flick ahead to read all the cartoons. I stop at the one with the character walking a bike by the cliff edge, who smiles at the grand view of a mountain range.

A sign says 'here is the news'. Does this refer to the simple gladness gained from 'reading nature' instead of the paper? Maybe the message is a trickier one about reading the layers of those uplifted rocks as if they were pages in a book.

That story is based on the fossil record and tells of five great extinctions. The cliff hanger is that we seem to be in the midst of the sixth one now.

In 1982, Sepkoski and Raup identified these five mass extinctions. The fossil record shows up to 70 per cent of all species were killed 450-440 million years ago and then again 375-360 million years ago.

As most life was in the sea, marine life was drastically reduced. The third extinction, 250 million years ago, is known as the Great Dying, which killed 90-96 per cent of all species on both land and sea. The fourth, 200 million years ago, brought down 75 per cent over 18 million years. The fifth was 66 million years ago, taking 75 per cent of all species, including dinosaurs.

In 2014, palaeontologists now read between these lines and note many lesser extinction events. The very first was some 2,400 million years ago, when the rise of photosynthesis released oxygen in the atmosphere.

This killed off or marginalised many single cell life-forms. Their descendants live inside animal guts or plant roots, in deep muds or ocean vents, safe from the newfangled atmosphere. In a similar way, each event has its own survivors. They become diversifiers who muddle along afterwards, making the best of the new conditions.

'Event' is a misleading chapter heading. A better word is 'interval', the open-ended space between two points. After all, these extinctions can span millions of years. But even that word suggests a static picture across time. Biologists Pimm and his colleagues make the story more dynamic by considering 'extinction rates'.

Their rate is calculated as 'how many of a million species go extinct each year'. That rate has speeded up from a tenth of a million per year to between 100 and a 1,000 of a million per year.

The reason is us. Species are going extinct faster than ever primarily because of habitat loss. Add climate change and takeovers by invasive species. By the end of the century, the estimates suggest from 30-50 per cent of all species will be killed.

Habitat loss is a formal phrase for a great shadow of grief grown place by place. Its origin stretches back centuries as different people were, and are now, displaced from homelands.

From highlands to backswamps, so many people forced away and profoundly disorientated. The dominant culture develops that, as Adam Smith pointed out in 1776, values diamonds more than water. Gas drills more than knitting needles. Roads more than koalas.

Knowledge of place also suffers from this habitat loss, but it is also the first hope for any cure.

Localisation works for education as well as economies. Place-based learning bypasses media fads with interests in the lives of nearby people and other species. It develops strong local histories. It builds economies as well as global awareness.

Place-based knowledge develops not only the news but the values that people need to be what Gruenewald calls 'inhabitants' not merely 'residents'. What practices recharge aquifers. What this soil does best. What healthy food are good staples. What neighbours need. How trees relate to fish migration. Where children can play outdoors. Why natural quiet matters.

Such knowledge builds courage for the activism needed to repair and protect habitats, the components of place.

We can stop ourselves and other species short of the extinction cliff edge.

We could wonder again at our news.

Did you know unborn sea turtles call out to each other from inside their eggs and coordinate their hatching time? Those little ones last March seen on Tallow Beach, no one seems to know even which species they were.

Over next summer, how about we learn more from those big turtles that come into bay?

By Mary Gardner

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