4. Thinking outside the jerry can

John DeJose, Malleefowl Preservation Group, WA

Abstract

Three active Malleefowl mounds on a 300 hectare bush property in south-west Western Australia were closely observed over several years. It seemed to the property owner that, during dry seasons, the mounds produced fewer chicks. In one dry season, water was added to the mounds to see what happened. Apparently, a high number of chicks (up to 35-40) were observed to hatch from each mound that season. Whether anecdotal reports such as this can inform the management of Malleefowl is discussed.

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ABSTRACT

Three active Malleefowl mounds on a 300ha bush property in SW Western Australia were closely observed over several years. It seemed to the property owner that, during dry seasons, the mounds produced fewer chicks. In one dry season, water was added to the mounds to see what happened. Apparently, a high number of chicks (up to 35-40) were observed to hatch from each mound that season. Whether anecdotal reports such as this can inform the management of Malleefowl is discussed.

BACKGROUND

MPG member, John Chandler, has spent much of his life in the WA bush. Like most with such long exposure, he has a great store of intuitive but unquantified knowledge of much that goes on in nature. Normal science has little or no use for such informal, anecdotal and unquantifiable data.

Post-normal science recognises that there are many ways of knowing. For example, it gives credence to the knowledge indigenous peoples carry in their oral traditions and other forms of knowing which are relevant to natural resource management. Our NRM institutions, academia and practitioners are starting to take notice of these other forms of knowledge but it still sits uneasily within the sector.

Command and control hierarchies, which typify many NRM stakeholders, have to date poorly embraced informal knowledge and scientists in the sector are similarly disinclined, for the most part. Social science does sometimes get a mention but normal science has usually been dismissive of its importance.

Most academic institutions continue to produce graduates who have little to no experience integrating informal knowledge or even that from other disciplines in their work. This surely bodes ill for those of us attempting to slow and even reverse the environmental declines of recent decades. We have ample proof that the way we have been going about the business of natural resource management is insufficient to realise this ambition.

Adaptive management is a process by which the informal knowledge of communities can be brought to bear upon complex environmental problems characterised by a high degree of uncertainty, such as changing the inflection of long term environmental decline. This is why the Board of the Malleefowl Preservation Group has resolved it to be the default operating system for the group.

For the purposes of this discussion, the salient point about adaptive management is that there is no privileged way of knowing. The process demands participants develop a common language and understanding of the problem and the workings of the system in which it nests. If we focus downscale on the conservation of one species, the Malleefowl, adaptive management would have us recognise informal knowledge such as concerns this presentation.

HYPOTHESIS

Presumably due to the high variability in rainfall across space and time within the Malleefowl distribution in WA, nesting success appears to be variable across the landscape. During his life as a bushman, John Chandler noticed that successful mounds seemed to occur where there had been soaking rains during the season when litter collection takes place. Those mounds tended to be smaller than less successful mounds found in areas where much less rainfall occurred during the critical period.

John also observed that those birds which owned successful mounds foraged closer to their mound than those owning less successful mounds which foraged further afield. By any measure, the Malleefowl is a high energy bird. The energy required to work the mound is legendary. Both the number and relative size of eggs produced by the female is prodigious, attesting to the need for calories in to be much greater than calories out over a long period.

If John's observations are borne out, this could indicate that the success of reproduction may be sensitively dependent not only upon the right amount of rain at the right time but, perhaps, also upon the balance of the birds' energy budget. Could this be related to the reproductive strategy of the Malleefowl, which defies nicely defined categories?

EXPERIMENT

The Chandlers own a bush property fronting the Pallinup River, which provides a corridor to other locations which can support Malleefowl. On acquisition 7 years ago, the block was full of weeds, foxes and cats and no nesting Malleefowl. After extensive weed and feral predator control, the property now has 3 productive Malleefowl mounds.

John reasoned that, in a highly cleared landscape, such as the WA wheatbelt, where Malleefowl exist only in small remnants, the combination of patchy rain and patchy habitat would be bad for Malleefowl reproduction. Knowing that critical winter rains were already being affected by climate change, John decided to see if he could make more Malleefowl by 'just adding water' at the right time.

During the litter collecting season, John added water to one or more mounds on the property, keeping another as control. He remotely captured and then reviewed many thousands of hours of video footage of Malleefowl over 7 years, allowed him to see females laying and chicks hatching on a regular basis.

RESULTS

Available details are sketchy in John's extended absence, but this much we do know. Water was applied experimentally to nests over at least a three year period, always during the time the Malleefowl were collecting litter.

In the first year (a very dry year) one nest was 'watered' (with much more than 40 litres) and another served as a control. John captured remote video of both nests which allowed egg laying and hatching of chicks to be recorded. The watered nest produced about 40 eggs and the control produced none.

In Year 2, John added a total of about 40 litres of water (much less than used on the experimental nest in Year 1) to the control nest and from the video evidence it seems that only about 10 chicks were produced, according to camera trap footage.

In Year 3, the control nest was given "the full water treatment" (as much water as the experimental nest) and about 30 eggs resulted. There had been no storms in the area; it was a relatively dry litter collecting season.

John estimates over 300 Malleefowl have been added to the local pool for recruitment due to the changes made to the block and extra watering in 7 years.

CONCLUSION

John Chandler 'knows' that 'just add water' does produce more eggs and chicks than not doing so. There are many uncertainties as well as flaws in methodology but this experiment does give an indication of how sensitively dependent reproduction of the Malleefowl is to adequate amounts of rain at the right time. From an adaptive management perspective, this may cause us to speculate as to whether there are any potential landscape-scale management actions which might be considered as a buffer to climate change for the Malleefowl of WA.

DISCLAIMER

Both state and federal legislation prohibit interfering with Malleefowl. Not only might it be illegal, but adding water could also be fatal to Malleefowl eggs if applied at the wrong time. Dr Joe Benshemesh, arguably the best-informed Malleefowl scientist, has advised that the mound environment is so finely balanced that such perturbation could easily result in diminished reproductive success. Accordingly the Malleefowl Preservation Group advises that it does not advocate any interference with Malleefowl or their mounds. Additionally, it was a condition of the National Malleefowl Recovery Team that this poster could only be presented if this disclaimer was included.