

# Making use of visitor incident data in Karijini National Park: A Western Australian case study

*Anna M. Gstaettner<sup>1</sup>, Michael Phillips<sup>2</sup>, Halina Kobryn<sup>3</sup>, Kate Rodger<sup>3</sup> and Diane Lee<sup>1</sup>*

<sup>1</sup>*Nature-based Tourism Research Group, School of Arts (Tourism), Murdoch University, South Street, Murdoch, 6150, WESTERN AUSTRALIA*

<sup>2</sup>*Visitor Risk Management Coordinator, Parks and Wildlife Services, Department of Biodiversity, Conservation and Attractions, Kensington, 6151, WESTERN AUSTRALIA*

<sup>3</sup>*Nature-based Tourism Research Group, School of Veterinary and Life Sciences, Murdoch University, South Street, Murdoch, 6150, WESTERN AUSTRALIA*

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## Background

Protected areas in Western Australia are considered a significant resource-base for tourism and outdoor recreation. However, in a context where one would expect enjoyment and adventure, visitor incidents and accidents are surprisingly common, ranging from minor injuries due to tripping and slipping accidents up to experiencing severe trauma or death. With increasing visitor numbers and a heightened potential for serious incidents occurring, Eagles (2014) recommends that visitor risk and safety management represent a major component of overall visitor management capacities of park agencies.

Management of visitor safety on lands and waters managed by public authorities is important as incidents involving harm to people may involve litigation and compensation requests. In order to prevent, or at least reduce, future injury and litigation, it is critical for protected area managers to learn from past events by identifying why and under which circumstances these incidents occurred. This paper illustrates, using Karijini National Park in Western Australia as an example, how the information obtained from incident recording and analysis systems has been used to inform and justify management decisions.

## Incident recording in Western Australia

Visitor incidents are defined as adverse events that required first aid or resulted in serious injury, illness, or death of a visitor involving the direct use of, or interaction with, managed park facilities or resources (Golder, Tuling & Krueger 2002). In Western Australia, the Parks and Wildlife Service increasingly acknowledges the recording and analysis of incidents as an effective way of gaining a deeper understanding of the hazards in various park contexts in order to develop and refine visitor risk assessment and management processes. The recording of both severe and less severe incidents is seen as important information input providing a learning platform for future scenario considerations. From this, incident factors can be identified, and organisational structures reviewed, providing an empirical justification to change policy and procedures, with a commitment to continuously improve incident reporting practices in order to comprehensively understand their occurrence in different park contexts (Gstaettner, Kobryn, Rodger, Phillips & Lee *in press*). Most recently, in an attempt to replace the paper-based incident reporting system associated with time-intensive approaches to incident analysis, the agency upgraded to a 'Rapid Incident Reporting system', combining occupational safety and health, fire, and visitor risk management into one accessible electronic database.

## Karijini National Park

The Karijini National Park is a remote park in north-western Australia, approximately 1,500 km from Perth (Figure 1). Karijini is one of about 100 national parks managed by the Parks and Wildlife Service, and is renowned for its spectacular gorges (e.g. Dales, Weano, Kalamina and Hamersley Gorges). A range of recreational opportunities exist in the park such as hiking, sightseeing, nature study and camping. According to internal data based on the agency's visitor information statistics collection system (VISTAT), there has been a steady increase of visitation over the last few years, from just 121,420 visitors estimated for the 2011/12 financial year to 313,850 visitors in 2016/17.

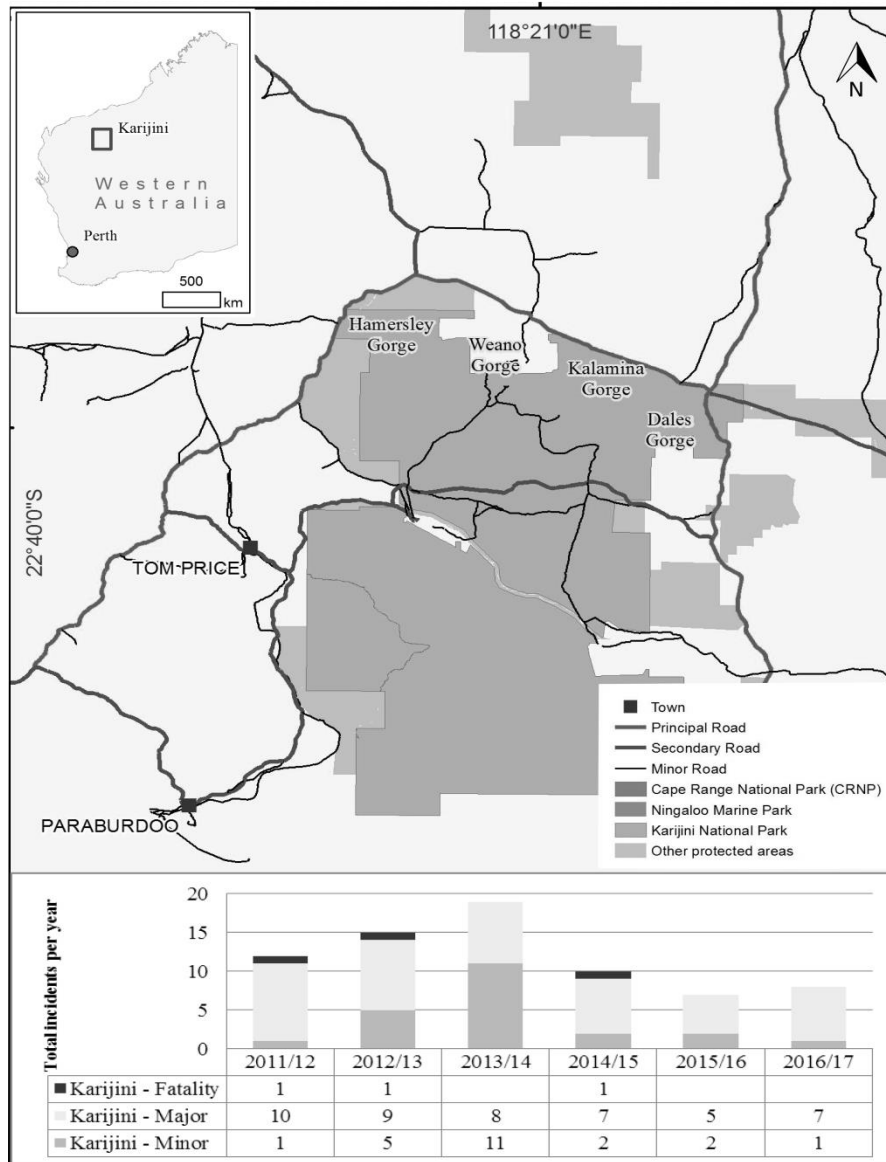


Figure 2 - Karijini National Park in Western Australia map and visitor incidents by severity over six consecutive years

Karijini National Park is a priority in visitor risk management considerations based on two criteria. Firstly, the park has a relatively high rate of incident occurrence overall compared to other parks in Western Australia. Most of these incidents are classified as major incidents due

to the great difficulty of providing emergency response services in remote park locations. Secondly, the park has a relatively high visitor risk factor considering the likelihood and the severity of injury per visiting party. The risk analysis in Western Australia requires the Parks and Wildlife Service monitoring visitation statistics to Karijini National Park, allowing the quantification of visitor risk levels in order to compare incident statistics to other park visitation contexts (considering both, the likelihood of incident occurrence and the severity of incidents). Various levels of risk represent different chances that any one visitor might experience harm calculated over a specified period of time considering the number of people exposed to the hazard. The risk analysis showed that Karijini National Park presents a higher risk of harm to any one visitor compared to other parks in Western Australia.

## **Making use of visitor incident data at Karijini**

The number and frequency of visitor incidents in Karijini National Park has seen many changes based on the way the Parks and Wildlife Service not only responds to incidents but also in the design and implementation of visitor facilities and infrastructure. The agency has implemented a range of measures to improve responses to incidents including:

- Installation of an emergency radio system at key locations which enables visitors to contacted rangers in the event of an incident;
- Provision of strategically placed emergency response equipment such as Royal Flying Doctor Medical chest, OxyViva equipment and anchor points for vertical rescue; and
- Close collaboration with local emergency services (e.g. Fire and Emergency Service (DFES), State Emergency Service (SES), St Johns Ambulance Australia, Western Australia Police).

In relation to visitor facilities and infrastructure, some of the key measures implemented as a result of visitor incident analysis include:

- Risk signage installation at key locations;
- Improvements in the delivery of risk and safety messages in park brochures and other promotional materials; and
- Improvements in facility designs such as the recent completion of the metal staircase and boardwalk (geotechnical risks associated with the gorge access) to improve visitor access to the gorge.

## **Reducing visitor incidents**

The detailed incident recording and analysis in Karijini National Park provided the legal and financial justification for strategic management intervention. As a result, a constant visitor incident reduction, both in frequency and severity, can be observed during the last three years (see Figure 1) based on more effective and efficient resource allocation in visitor risk management decisions in the State.

## **References**

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