

Determinants of Habitat Disturbance by Protected Area Users

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Introduction

- ◆ **Wildlife Tourism encompasses a diverse range of activities,**
- ◆ **Much of this occurs within Protected Areas,**
- ◆ **Few studies have assessed the impacts of such use on non-target species.**

Introduction

- ◆ **Protected Areas with a long history of use may reveal important patterns of disturbance by users,**
- ◆ **They may also reveal how particular species have been impacted.**

Aim of this Study

To assess the impact of visitors to Royal National Park on the habitat of an endangered snake.

Australia's Oldest National Park

- ◆ Royal National Park was gazetted in 1879,**
- ◆ It is a popular location in Sydney for experiencing nature,**
- ◆ It currently receives over 2 million visits per year.**

Target Species:

The Broad-headed Snake

- ◆ Is restricted to the Sydney basin,**
- ◆ Appears to be dependent on loose surface rock on outcrops for shelter during the cooler months,**
- ◆ Surface rock is subject to a range of disturbances with long-term impacts.**

Relevance of the Broad-headed Snake to Wildlife Tourism

- 💧 Visitation has resulted in disturbance to outcrops (eg cairns, fireplaces, trampling)**
- 💧 Greater numbers of visitors to the snake's habitat will increase disturbance,**
- 💧 Conserving this endangered snake will depend on understanding the nature and frequency of habitat disturbance.**

Field Studies Addressed The Following Questions

- ◆ Do the attributes of rock outcrops influence the likelihood of disturbance?**
- ◆ Is habitat disturbance continuing and is it greater close to roads & walking tracks?**

Do the attributes of rock outcrops influence the likelihood of disturbance?

- 💧 We examined 50 rock outcrop sites scattered throughout the Park,**
- 💧 We recorded distance to an access point, difficulty of access, site-visibility & scenic amenity from the site,**
- 💧 We then traversed a 100 m transect and looked for various indicators of disturbance.**

Q: Do the attributes of rock outcrops influence the likelihood of disturbance?

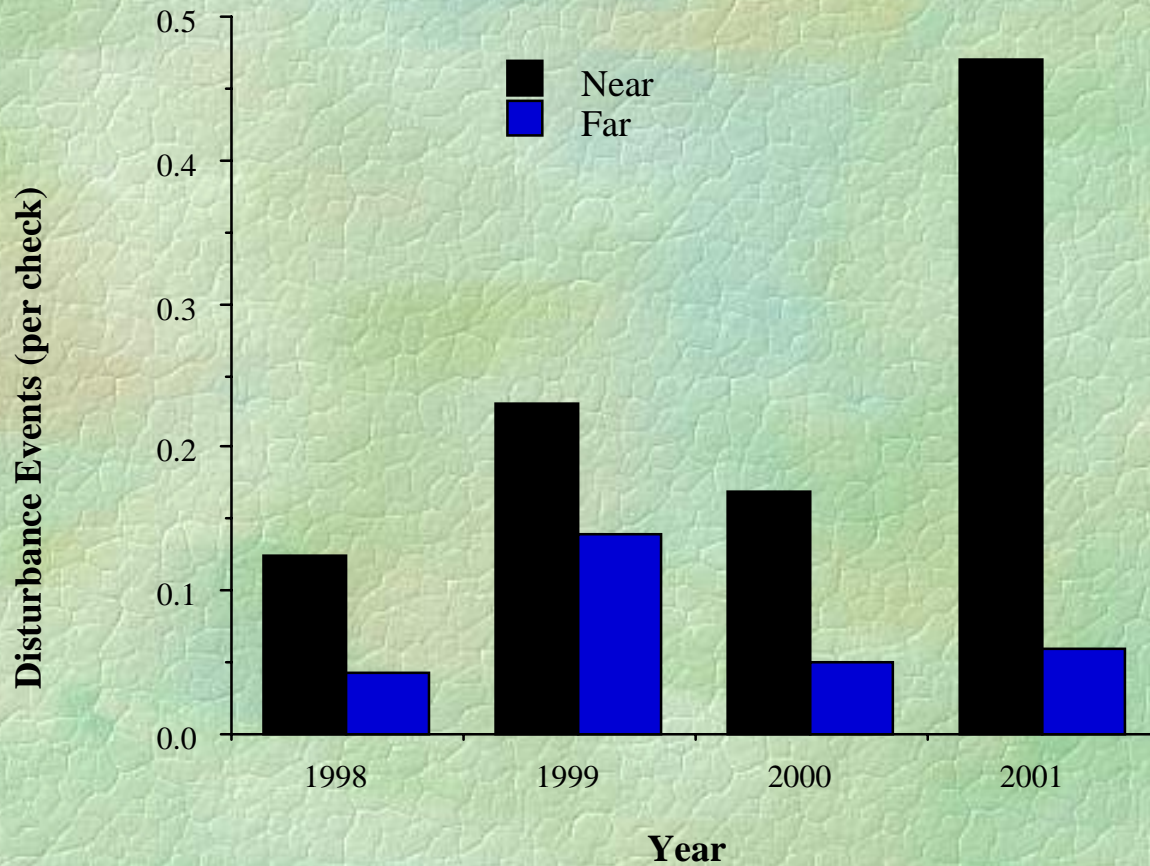
A: Although disturbance was observed at 60% of sites, there was no significant influence due to our site factors.

We were unable to find many sites >750 m from an access point, due to the abundance of roads and tracks.

Is habitat disturbance continuing and is it greater close to roads & walking tracks?

- 💧 In 1998 we established 22 experimental rock outcrop sites throughout the Park and have monitored for disturbance over 4 years,**
- 💧 These outcrops were arrayed in pairs with one located near (\approx 250 m) and one far (\approx 400 m) from a road or track,**
- 💧 Our outcrops consisted of 10 rocks placed on a rock platform almost bare of natural rock.**

Frequency of Disturbance (10-rock sites)

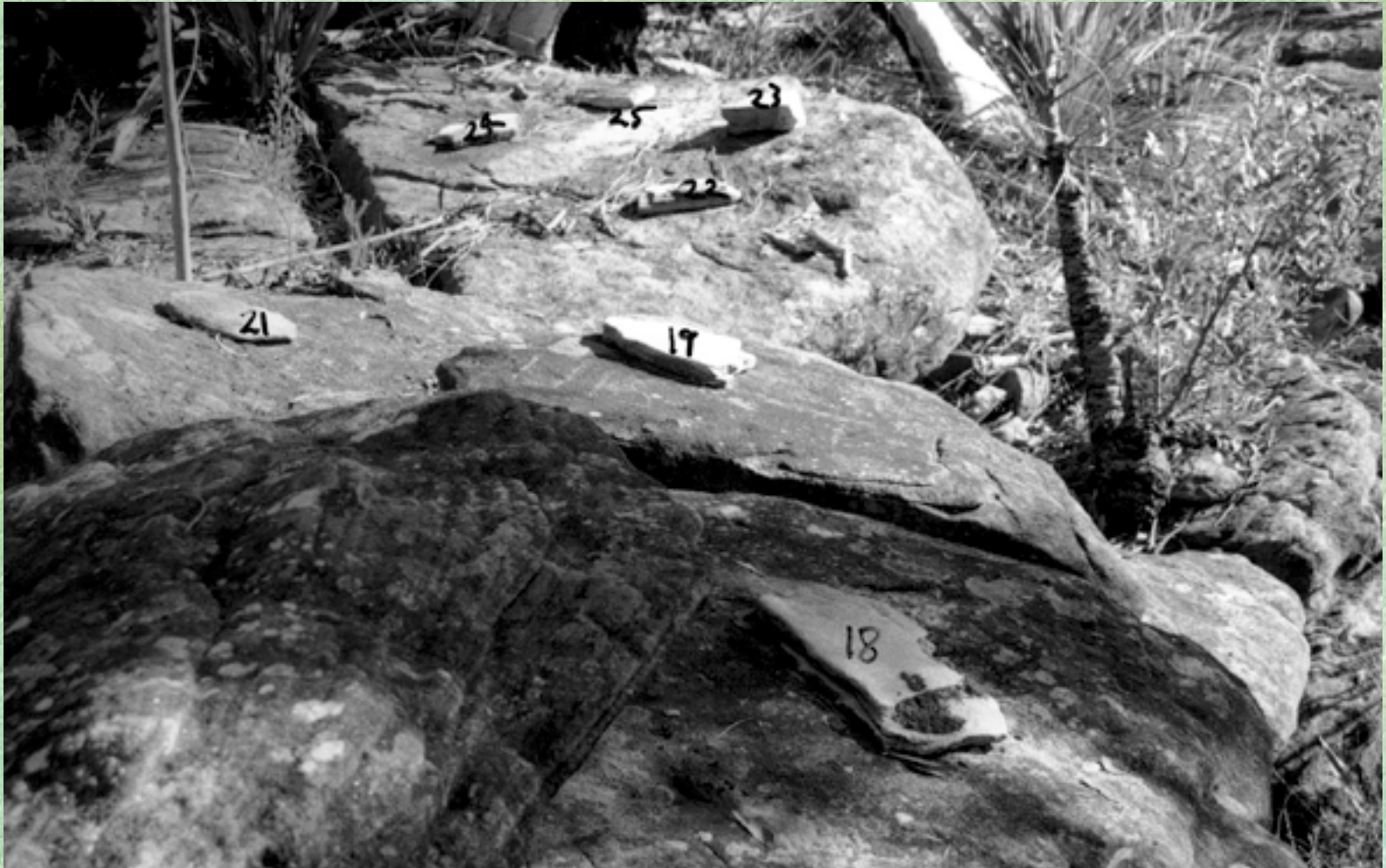


Q: Is habitat disturbance continuing and is it greater close to roads & walking tracks?

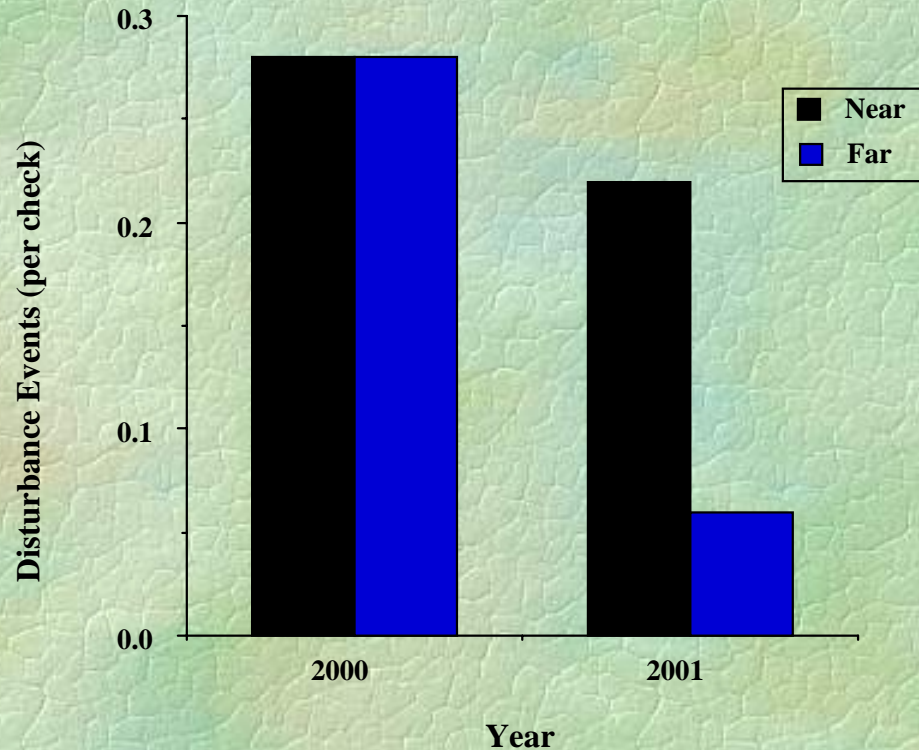
A: Clearly, disturbance is continuing and its intensity is consistently greater at sites close to roads & tracks.

Is habitat disturbance continuing and is it greater close to roads & walking tracks?

- 💧 In 1999, we established 12 experimental rock outcrop sites in the Park,**
- 💧 Outcrops were arrayed in pairs with one located near (; 250 m) and one far (; 400 m) from a road or track,**
- 💧 Our outcrops consisted of 50 rocks placed on a rock platform in order to represent what might be used in habitat restoration.**



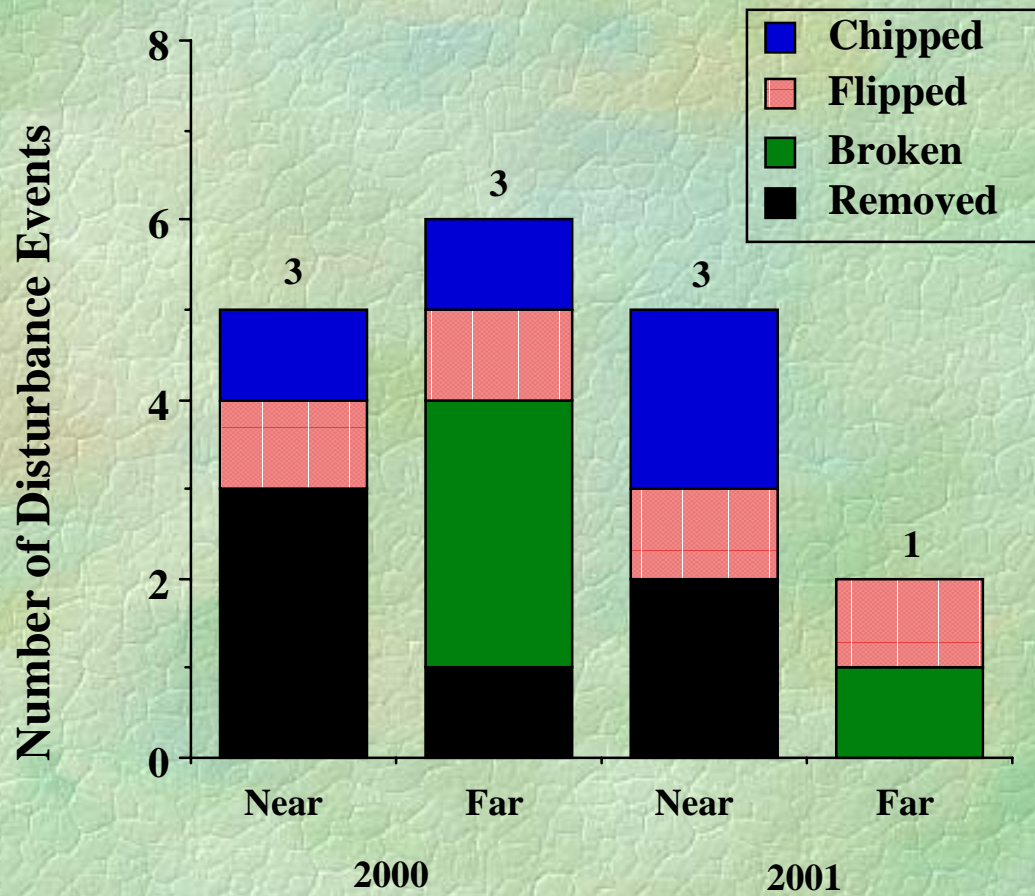
Q: Is this pattern of disturbance observed at our 50-rock experimental sites?



A: On-going disturbance was observed. However, no difference in the incidence of disturbance in 2000, for near & far.

This result was mostly due to repeated disturbance at one far site which is a known collectors' site.

Types of Disturbance (50-rock sites)



Conclusions

There is on-going habitat disturbance that requires a management response.

Our experimental studies suggest that distance from roads & tracks may be a good surrogate for frequency of disturbance.

This disturbance is due to hikers and to reptile collectors.

Greater access for hikers to remote areas allows access to reptile poachers.

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