

Case Study: Visitor Perceptions of Captive Wildlife Tourism in a Western Australian Natural Setting

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Wildlife tourism involves a broad sweep of experiences that includes all of the aspects of the tourism genre with the distinguishing feature of animals as the primary attraction. The uniqueness of Australian wildlife in combination with factors such as remoteness and rarity appear to have provided the ideal context for successful wildlife tourism operations. Barna Mia, located in a large remnant woodland in the central southern wheatbelt of Western Australia, is approximately 165 km southeast of the state's capital, Perth. Dryandra Woodland, the location of Barna Mia, consists of a closely grouped and connected cluster of native remnant vegetation blocks. The enclosure is surrounded by electrified, vermin proof fencing to keep feral predators out and the captive fauna in. The results of the visitor survey at Barna Mia suggested the experience provided a great sense of satisfaction amongst respondents. This was both in terms of the overall satisfaction as well as satisfaction with specific parts of the experience. The feeling of being 'in the wild' may have been enhanced by the lack of barriers between visitors and the animals and the absence of constraints on animal movement through the enclosure. Improving the operation of Barna Mia as an attraction in itself and as part of the Dryandra Woodland product may serve to improve its success as an attraction. However, an innately attractive tourism experience cannot work without appropriate integration within the specific wildlife tourism product of Dryandra Woodland, while coordination with tourism on a regional scale is also important.

Keywords: captive wildlife tourism, visitor satisfaction, rare marsupials, Barna Mia, Dryandra Woodland

Introduction

Wildlife tourism is a significant part of Australia's tourism identity owing to the diversity of charismatic animals unique to the continent (Fredline & Faulkner, 2001; Green *et al.*, 1999; Higginbottom *et al.*, 2003; Higginbottom & Buckley, 2003). For example, a survey of international visitors by Fredline and Faulkner (2001) indicated that approximately 67% specifically stated they wanted to see wildlife during their visit while 71% reported having

seen wildlife during their visit to Australia. Wildlife tourism involves a broad sweep of experiences that includes all of the aspects of the tourism genre with the distinguishing feature of animals as the primary attraction. Such experiences may involve aquatic or terrestrial animals, indigenous, endemic or feral animals as well as captive or non-captive animals (Burns & Howard, 2003). The uniqueness of Australian wildlife in combination with factors such as remoteness and rarity appear to have provided the ideal context for successful wildlife tourism operations.

Green *et al.* (1999) stated that the important components required for the popularity of a wildlife tourism experience include: the perceived charisma of certain species; vulnerability; uniqueness and the ease of viewing the species of interest. Ease of viewing relates to the daily activity cycle (waking hours, peak foraging times, seasonality) and the geographic location, range and habitat of species. For example, it may be assumed that nocturnal wildlife are more difficult to view than diurnal wildlife as would wildlife in geographically isolated and restricted habitats as compared with widely distributed habitats. Commonly, rare and difficult to find wildlife can present a lucrative tourism market (e.g. whaleshark and gorilla tourism) that is generally accessible only by those with the time and the money (Shackley, 1996). Wildlife that presents difficulties in viewing may also appeal to a narrow audience of enthusiasts and professional interests more than 'the mass market' given the patience and dedication often required for a successful viewing experience. As wildlife tourism demand is apparently directly related to the rarity of a species (Moscardo *et al.*, 1999), removal of accessibility barriers such as difficulty of viewing may open the experience to a broader audience. One method of providing ease of viewing rare nocturnal animals, and therefore improving the success of a wildlife tourism venture, is through use of a captive wildlife facility.

Viewing Captive Wildlife

The viewing of captive wildlife comprises a spectrum ranging from heavily manipulated through to more authentic wildlife experiences (Newsome *et al.*, 2005). At the highly controlled end sits the traditional zoo in the urban environment. There are also situations where wildlife may be viewed from vehicles in park and garden environments and/or people may mix with animals in walk-through enclosures that are part of the zoo environment. More naturalistic encounters can be achieved when the captive wildlife occurs in a semi-natural or natural environment and where visitors gain close access unrestricted by cages or visible barriers.

Many species of Australian wildlife pose difficulties with viewing access while at the same time having great charisma, uniqueness and rarity. Consequently, captive wildlife tourism is a significant industry in Australia with a total annual visitation rate of approximately eight million people in 2000. One-third of those visitors were international tourists indicating captive wildlife tourism is a significant component of the Australian wildlife tourism product (Tribe, 2001). In terms of the type of tourists captive wildlife viewing experiences attract, Tribe (2001) stated that very little was known in terms of who they are and what they demand. Shackley (1996) had earlier mentioned

that captive wildlife tourism attracts an audience who otherwise could not afford a wildlife watching holiday in a non-captive setting.

Traditionally, the primary reason for visiting wildlife in captivity appears to be related to 'entertainment' (Tribe, 2001). However, what visitors find to be entertaining has changed over time from a focus on circus act style presentation and the 'freak show' to a preference for more naturalistic representations of wildlife. This change in focus of what visitors find entertaining is reflected in the change in the nature and design of captive wildlife facilities. Historical examples of perceived entertainment such as the London Zoo Chimpanzee Tea Party, dancing bears and anthropomorphised circus animals have lost much of their appeal (Jamieson, 1995). Shackley (1996) described what she considered to be positive examples of 'entertainment' based around encouraging captive animals to simulate natural behaviour in enclosures designed to look like natural habitat. This generally centres on feeding regimes in which animals must forage for food or solve problems to obtain food. Artificial termite mounds for chimpanzees to poke sticks into, trees that exude honey at particular times of the day for bears to find, and scattering food around the enclosure such that gorillas must seek it using foraging behaviour are used as examples. Writing from an anthropocentric perspective, Shackley (1996) justified this form of 'entertainment' by stating: 'There can be few ethical objections to animals performing natural food-gathering functions which also happen to entertain visitors. . .'. This seems to be a view based on the end justifying the means where the use of animals for human entertainment is acceptable as long as it has the guise of naturalistic behaviour.

Dengate (1993) had also supported the idea of emphasising visitor expectations for education about captive animals in the context of their natural origins rather than anthropomorphising them. Of course, in the end, the animals are in an artificial environment and fed a regulated (artificial) diet while being watched by onlookers so any appearances of behaving naturally are simply that. Indeed, Midgely (1984) commented that: 'captive animals are neither fully domesticated nor are they fully wild, they exist in a mixed context'. This might suggest that naturalistic captive wildlife facilities salve the tourist conscience by providing 'entertainment' on the pretext of witnessing natural behaviours in a natural setting.

Moscardo *et al.* (1999) stated that captive wildlife tourists are now particularly attracted by naturalistic enclosures and pleasant, natural outdoor settings while also being able to touch and feed the animals in what could be construed as more of a domesticated animal interaction. In recognition of this, Tribe (2001) went on to suggest that captive wildlife tourism may be most effective if it incorporates opportunities for interactive experiences both between tourists and animals and between tourists and guides. He also inferred that removing barriers between visitors and captive wildlife can function as a popular draw card. This may be in the form of 'walking wildlife through the zoo' or could be interpreted as a captive environment in which the tourists and the animals are in the enclosure together. This ideally would take place in a setting that simulates the animal's natural habitat. As mentioned previously, Dengate (1993) identified education with a strong conservation message as an important component of appealing wildlife tourism.

The demand for such styles of experience is reflected in the refocusing of traditional zoos (captive facilities usually in metropolitan areas) from showcasing a wide variety of exotic species to specializing in a few. The shift also encompasses an emphasis on conservation of species by preserving specimens in captivity where survival in the wild is threatened with the potential for reintroduction or restocking of depleted non-captive populations (Shackley, 1996; Tribe, 2001). Thus the ideal captive wildlife tourism facility incorporates conservation and education with the opportunity for interaction with rare, charismatic animals in a naturalistic setting. This reflects the changing expectations of visitors to captive wildlife facilities, which in turn, may influence their satisfaction with the experience. So it seems that captive wildlife tourism is a type of 'entertainment' based on a blend of experiencing 'wild' animals in a naturalised context while still being able to view them easily and perhaps get close and touch them akin to interacting with a domesticated animal.

The Barna Mia Study

The following case study presents the results of a survey of visitors to a captive wildlife viewing facility named Barna Mia. This facility is operated by the state government Department of Conservation and Land Management (CALM), an agency responsible for managing protected areas and wildlife in Western Australia. Barna Mia is located in a large protected remnant woodland, known as Dryandra, in the central southern Wheatbelt of Western Australia, approximately 165 km south east of the state's capital, Perth (Figure 1). The Western Australian Wheatbelt is an agricultural area mostly cleared for grain and sheep production but has a scattering of remnant native vegetation pockets often no more than a few hectares of severely degraded habitat (Hobbs, 2003). Dryandra Woodland is an interconnected cluster of remnant native vegetation blocks, totalling 28,000 ha, the largest of which is 12,000 ha. For this reason, Dryandra Woodland is significant owing to its relatively large size, ecological health and subsequent role as a sink for displaced and rare wheatbelt fauna and flora. Dryandra is also an important recreation and tourism resource. Access is afforded via a network of unsealed roads and walk trails. There are also six self-contained 'rustic' cottages and a dormitory facility for accommodating up to 60 people at Dryandra Village, located within the woodland.

Barna Mia is made up of a 2.5 ha enclosure and an architecturally designed visitor centre (Figure 2). The enclosure is surrounded by electrified, vermin proof fencing to keep feral predators out and the captive fauna in. The visitor centre is incorporated into the fence line and acts as the animal feed preparation facility, educational centre, merchandise sales area, end of tour snacks and drinks venue and the gateway into the enclosure (Plate 1). At the time of the survey, the facility housed six native fauna species involved in a CALM breeding and re-introduction programme in Dryandra Woodland. These were: the Bilby (*Macrotis lagotis*), Boodie (*Bettongia lesueur*), Rufous Hare-wallaby (*Lagorchestes hirsutus*), Banded Hare-wallaby (*Lagorchestes fasciatus*), Burrowing Bettong (*Bettongia penicillata*) and the Western Barred Bandicoot

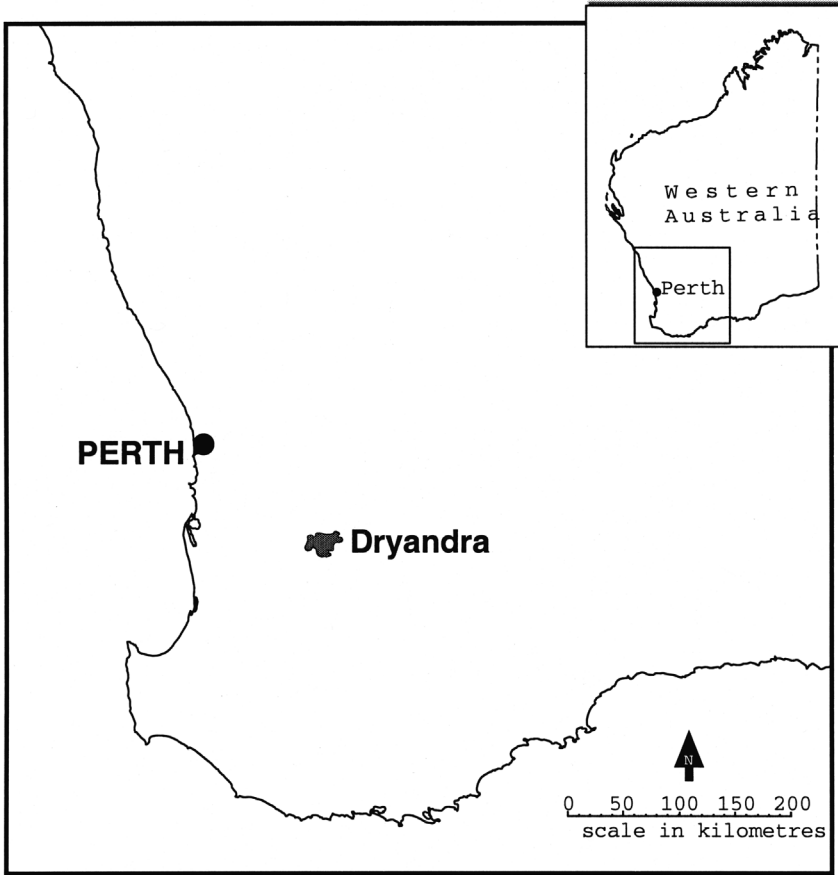


Figure 1 Location of Dryandra Forest

(*Perameles bougainville*). These are small, rare marsupials that were either endangered or locally extinct prior to the breeding programme owing to land clearing and fox predation. A fox eradication programme coupled with the breeding programme has resulted in the re-establishment of rare marsupial populations in Dryandra Woodland. Barna Mia was built and operated by CALM, as a means of allowing tourists to view the rare fauna involved in the breeding programme that is carried out in the much larger (20 ha) enclosure nearby. The facility is located in a relatively remote, undisclosed section of Dryandra Woodland and is not sign posted. This was intended to minimise the risk of vandalism and unsolicited public visitation. For this reason, visitors do not access Barna Mia directly but meet a CALM guide at a designated location who then leads the group (in their own cars) to the facility.

A tour of Barna Mia involves several distinct stages. As the animals within the enclosure are nocturnal, all tours are conducted at night. Small groups of visitors meet the CALM guide at a location in Dryandra Woodland known as Old Mill Dam. From there, the guide leads the visitors in a convoy of cars

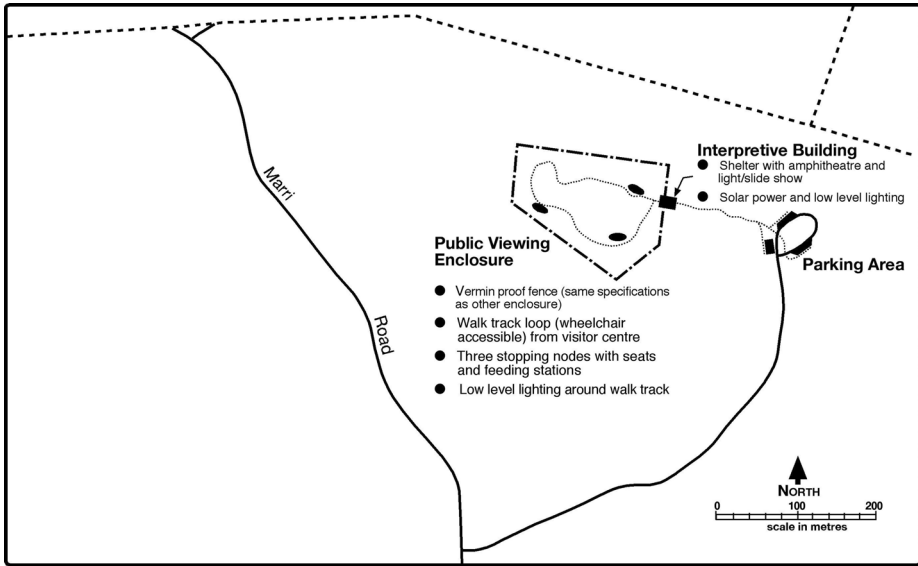


Figure 2 Barna Mia wildlife viewing facility, Dryandra, Western Australia

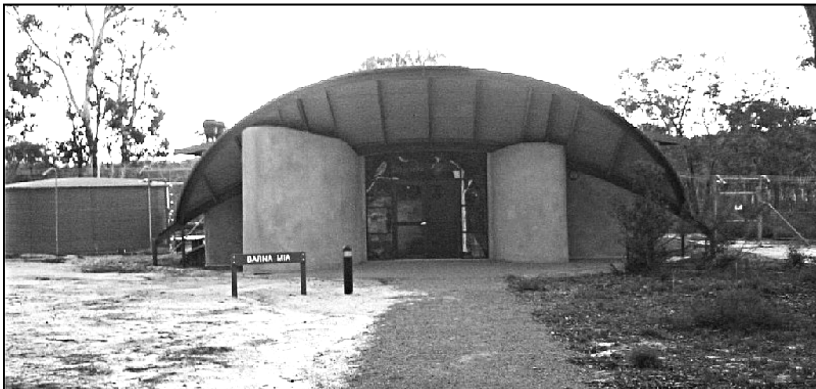


Plate 1 Entrance to Barna Mia with visitor centre incorporated into vermin proof fence perimeter

through the woodland (on gravel roads) to the actual facility, about 7 km away. The act of travelling from the meeting point to an undisclosed location on the woodland may add to the sense of travelling into an isolated, wilderness type area. On arrival at the car park, the guide gives a brief introduction and summary of important behavioural rules (such as being quiet, no rapid movement, no personal torches) then leads the group into the visitor centre itself. The visitors are seated in a open plan area and the guide presents a 45 minute description of the history of Dryandra Woodland, CALM’s fox eradication programme, the breeding programme and Barna Mia itself. The presentation is followed by a walk through the enclosure that may last from 45 minutes to over an hour depending on how many animals are seen. The guided walk

incorporates a defined walk trail loop of packed sand through the enclosure with four 'feeding stations'. The trail is about 300 metres long with the feeding stations being about 50 metres apart. The feeding stations are small clearings adjacent to the path with log seating for a small group of visitors.

During the guided walk, the animals are fed fresh chopped fruit and feed pellets by the guide in order to attract them to the visitor groups (Plate 2). Visitors take part in this process by placing the trays of food allocated to them by the guide in the clearings. The guide then points out the animals using a spotlight with a red filter (to minimise disruption of the animals' night vision). This process is repeated at each of the four feeding stations. On return to the building, visitors are provided with a hot drink and a snack. There is time to browse the available merchandise or chat with the guide before visitors make their own way back to their night accommodation.

Barna Mia is theoretically an ideal captive wildlife tourism attraction because it presents rare, secretive and charismatic fauna in a natural setting and in an interactive manner. There is an educational focus based on a strong conservation ethic that is communicated to visitors in a personalised way (e.g. Higginbottom *et al.*, 2003). The direct association of the enclosure with the Dryandra Woodland breeding programme emphasises the practical contribution made to the conservation of native fauna. The free range the captive animals have within the enclosure supposedly reduces the impression of a zoo type confinement, particularly as there are no barriers between the animals and the visitors. Having the tour presented by a guide to small



Plate 2 Boodia (*Bettongia lesseur*) using feed tray in one of the feeding station viewing areas

groups of visitors also personalises the experience and facilitates the potential for customising the tour to the given visitor group. All of these factors appear to appeal directly to the contemporary captive wildlife tourist profile in terms of the style of enclosure in demand and the type of experience preferred.

Barna Mia may also arguably fit the criteria for an ecotourism experience based on characteristics cited in the literature (e.g. see Newsome *et al.*, 2005). There is a plethora of definitions of ecotourism (Fennell, 2001) but it is not the intent of this paper to conduct a review or argue for a specific version of the concept. What has been observed is that there are common themes that run through the attempts to encapsulate the meaning of ecotourism (Kontogeorgopoulos, 2004). Concepts such as: educational, nature based, undeveloped, uncrowded and sustainable commonly appear in definitions along with the need for ecotourists to contribute to local communities or conservation (Fennell, 2001; Hughes & Morrison Saunders, 2003; Kirkby & Pollitt, 1998; Kontogeorgopoulos, 2004; Newsome *et al.*, 2005). The characteristics of Barna Mia discussed above can be related directly to the common concepts associated with ecotourism.

Barna Mia is located in an relatively isolated natural setting, away from mass tourism locations and population centres, and is part of a wider conservation programme. Barna Mia is specifically designed for small group experiences. It has a strong education focus on both the natural and cultural heritage of Dryandra Woodland delivered in a personalised manner. The facility was built with the intent of increasing visitor contributions to the local economy, mainly through overnight accommodation spending. The construction, maintenance and operation of Barna Mia is conducted using locally resourced materials and guide staff. The built (or developed) character of Barna Mia may be cited as a significant aspect that detracts from the 'true' ecotourism experience though Hughes and Morrison Saunders (2003) argue against such a view. The fact that Barna Mia is essentially a free range zoo in a natural setting may put it in the class of 'soft' ecotourism as defined by Kirby and Pollitt (1998). This means that while it provides a 'comfortable' and somewhat contrived nature based encounter, Barna Mia has many of the central characteristics of an ecotourism experience.

Method

The Barna Mia visitor survey was part of a wider project examining the dynamics of tourism development in the Dryandra Country region (see Hughes & Macbeth, 2005, forthcoming). The larger project provided a broader context within which the survey results could be interpreted based on observations and interviews with a variety of groups and individuals associated with the facility.

During the first year of operation (2003), visitors to Barna Mia were requested to complete a satisfaction survey aimed at determining the success of the facility as a captive wildlife tourism experience. The Barna Mia satisfaction survey was intended to provide a detailed picture of what visitors thought about the facility and was custom designed for this purpose. A convenience sampling technique was used that gathered data from individuals and groups. The self-administered written survey data was complimented with casual observations of tour groups and unstructured discussions with CALM staff.

Surveys were conducted from April to September, the peak tourist visitation period for Dryandra Woodland. The survey forms were provided to the guides by the researcher for distribution to visitors. Tour guides were requested to mention the survey during the introductory segment of the tour and again at the conclusion of the tour. Visitors were then given the option to complete a survey at the conclusion of the evening tour. This represents an opportunistic form of sampling whereby members of the visitor group self selected rather than being randomly selected. Hence the data presented should be viewed in this light.

The survey form consisted of a brief introduction as to the purpose of the survey followed by a series of questions relating to how satisfied the participant felt with their experience of Barna Mia. Satisfaction was quantified using a four point scale ranging from 1 (very low satisfaction) to 4 (very high satisfaction). Participants indicated their level of satisfaction on the scale then were requested to write a comment relating to the reason for the satisfaction rank they gave. The survey began with a question relating to the experience as a whole before addressing each designated stage of the experience individually. The satisfaction questions were followed by some basic demographic and tourism activity related questions as outlined in Table 1.

The survey sought to ascertain the overall satisfaction of respondents in combination with comments about the experience in general. This was proceeded by a series of statements relating to the distinct stages of the evening’s experience. These enabled evaluation of specific segments of the experience in terms of how visitors responded as the evening progressed. The demographic

Table 1 Summary of Barna Mia survey questions

<i>Question</i>	<i>Options provided</i>
Please indicate your overall satisfaction with the Barna Mia experience by circling one of the numbers on the scale below.	Satisfaction scale
What is the main reason for the overall satisfaction ranking you gave the Barna Mia experience?	Open ended
Please indicate your satisfaction and the thing you remember most for each stage of your experience this evening: The presentation given before the guided walk. The guided walk around the enclosure. Refreshments and browsing on return to the building after the walk. The information displayed in the building. Stopping at the feeding stations during the walk.	Satisfaction scale with space for comments
How could we most improve the Barna Mia experience?	Open ended
Where will you be staying tonight?	Dryandra Village, Dryandra camping, Perth, Narrogin, nearby town, Other
General Demographic information (age, gender, place of residence etc.).	As appropriate

questions enabled some basic analysis to determine the influence of independent variables on responses provided. The highly controlled character of the tour experience meant that all respondents experienced the facility in the same manner as outlined in the survey. Some uncontrollable variations may have occurred in relation to the content of presentations and the animals viewed. Content variation may have occurred owing to the interactive design of the experience whereby guides respond to visitor questions throughout the evening. The appearance of animals may have varied owing to weather conditions though using food as an attractant ensured that all groups viewed at least some of the species within the enclosure. Frequent discussions with the guides and analysis of visitor comments in the survey were used to identify variations such as poor weather or lack of animal sightings. Tours were not conducted in the event of heavy rain or severe weather.

Data Analysis

Survey data was entered verbatim into an Excel spreadsheet and formatted for import into SPSS v10. Satisfaction rating and other qualitative data was analysed using non-parametric comparative and correlation statistical tests available in SPSS. Non-parametric testing was used owing to the ordinal character of the quantitative data and the likelihood of non-normal distributions. Qualitative data was analysed manually by identifying common descriptive words used by respondents and using these to create subgroups for responses to each open ended question. Manual analysis of written responses was selected owing to the relatively small number of respondents and the higher level of engagement with the data this method afforded. The subgroups created by use of common descriptive key words were compared using simple frequencies of response. Where quotes are used to illustrate visitor subgroup responses, examples were selected from the given response category that demonstrated the essence of the viewpoint expressed.

The small sample size should be taken into consideration when viewing the results of the study and its relevance in a wider population context. The newness of the facility also prevented validation of results with past data. However, the similarities in responses to the open ended questions that pervade the survey results points to common experiences of the facility that may reflect particular characteristics. The overwhelming but independently arrived at similarities in response over an extended period of time provided the authors with considerable confidence in the data.

Results and Discussion

A total of 85 Barna Mia visitors completed survey forms between April and September of 2003. The total number of visitors during this period was about 780 meaning the survey data represented approximately 11% of the total visitor population, a disappointingly low number in the circumstances. During the survey period, nightly tour group sizes varied anywhere from two to 30 individuals. The proportion of each tour group that completed

the survey varied from 100% (for small groups) down to less than 10% (for larger groups).

Discussion with guides suggested that the fewer completions of forms with larger tour groups may be a function of the tendency for subgroups within the tour to nominate representatives to complete the questionnaire on their behalf. Thus, in a large tour group of 30, there may be two or three sub groups (separate families, clubs) who decide that a single member will complete a survey form. Casual observations of tours suggested that the nominated survey participant generally did not interact with the rest of the group when completing the form meaning that the responses were primarily an individual’s perception rather than group consensus. However individual responses may have been influenced by earlier discussion with other group members during the experience. While the total number of surveys may be statistically representative of the total visitor population, the tendency for individual larger groups to be under-represented suggests that the mean responses are more proportionally indicative of the small group experiences. This is mainly owing to the fact that a higher proportion of participants in smaller tour groups filled in the survey forms relative to the larger tour groups. Further, there is no comparative data available to ascertain the demographic representativeness of the respondents.

The results of the visitor survey at Barna Mia suggested the experience provided a great sense of satisfaction amongst respondents. This was both in terms of the overall satisfaction as well as satisfaction with specific parts of the experience. Table 2 summarises the satisfaction ranking data for the overall experience and each component of the experience at Barna Mia. The value *n* represents the number of survey participants who indicated a satisfaction rank score for the respective experiential aspects.

Table 2 Mean satisfaction rating data according to surveyed Barna Mia visitors

<i>Aspect of experience</i>	<i>n</i>	<i>Satisfaction rating</i>			
		<i>Mean</i>	<i>Std. dev</i>	<i>Min</i>	<i>Max</i>
Overall satisfaction	85	3.75	0.47	3	4
Meeting the guide at Old Mill Dam	82	3.54	0.76	2	4
Driving to Barna Mia	81	3.44	0.72	2	4
Arrival at Barna Mia	82	3.57	0.73	1	4
Presentation before walk	83	3.70	0.58	2	4
Other information in building	80	3.40	0.59	2	4
Guided walk	84	3.77	0.46	2	4
Stopping at feeding stations	84	3.73	0.58	2	4
Post walk refreshments	78	3.45	0.81	1	4

Overall Satisfaction

Respondents consistently ranked their overall satisfaction very highly although satisfaction for specifically identified segments of the experience

varied slightly. The mean overall satisfaction ranking for the experience was 3.75 with the range in ranking being from 3 to 4 on the four point satisfaction scale. The main aspects of the experience respondents identified in connection with their overall satisfaction rating are outlined in Table 3. The total number of responses provided is greater than the number of respondents as many wrote more than one reason for their satisfaction ranking.

The most frequently cited reason for the satisfaction ranking given related to the strong educational emphasis of the experience. The educational component was delivered primarily through the semi-formal presentation before the walk through the enclosure although the guide also provided information prior to entering the facility and during the guided walk.

Of particular interest was the apparent perception of some respondents that the relatively small enclosure at Barna Mia provided an experience of animals in a wild or non-captive context. This affirms the intentions in the original plans for the provision of an uncontrived experience of rare marsupials. Almost a quarter of the respondents (23.2%) commented on the natural surroundings or the positive experience of seeing animals in a natural setting. This view is illustrated by examples of statements selected from this subgroup:

- 'The opportunity of seeing Bilbies in the wild' (respondent #20)
- 'seeing the animals in the bush' (respondent #53)
- 'Able to see rare animals in natural habitat' (respondent #83)

The feeling of being 'in the wild' may have been enhanced by the lack of barriers between visitors and the animals and the absence of constraints on animal movement through the enclosure (Tribe, 2001). The enclosure was also built in such a manner that it enclosed an area of the woodland, meaning the vegetation within the captive facility was the same as that without. In addition, the necessity for nocturnal tours of the enclosure meant the perimeter fence was obscured by the night darkness. While vegetation in the enclosure is primarily low scrub with a few scattered trees that do little to obscure vision, the low level of lighting and location of the walk trail in the centre of the enclosure meant that perimeter fencing was difficult to see. This illusion may also be enhanced

Table 3 Categorized reasons associated with overall satisfaction rating of Barna Mia experience ($n = 82$)

<i>Response category</i>	<i>No.</i>	<i>%</i>
Strong educational emphasis	33	40.2
Opportunity for viewing rare animals	27	32.9
Enjoyed viewing wildlife	27	32.9
Friendly/informative guide	23	28.0
Seeing animals in natural habitat behaving naturally	19	23.2
Close proximity of animals	14	17.1
Evidence of wildlife conservation effort	12	14.6

by visitors not having to pass through a gate in a fence to enter the enclosure but rather, passing from the main building and through a glass door.

Comments suggesting the respondents had experienced animals in a natural setting seem at odds with the artificial feeding regime used to attract animals to the feeding stations. This is done in an overt way, using plastic trays and including audience participation that was by no means natural. This perhaps is indicative of attitudes toward the feeding of animals in a wildlife tourism context whereby the use of food to attract animals may be seen as acceptable when used to provide access to animals of interest. In addition, the feeding regime may be legitimised in the eyes of the visitor by the officially condoned nature of the activity and the controlled way in which it is carried out using custom made feed pellets and measured portions of chopped fruit (Newsome *et al.*, 2005).

While a significant minority of respondents commented on their experience of wild animals in a natural habitat, most appeared conscious of the captive nature of the experience. This did not seem to detract from the satisfaction rating as the comments were associated with high rankings. This was probably because the captive experience enabled viewing of animals that would be very difficult to find in a non-captive setting. Selected statements from this group demonstrate the manner in which this view was expressed:

‘We saw all of the animals that were kept in the enclosure’ (respondent #36)

‘a great viewing experience that we will probably never have in the wild’ (respondent #73)

‘Done as naturally as possible – perfect ...’ (respondent #41)

The awareness of the captive nature of the experience was also viewed in a positive light as it was often connected to the privilege of being able to see such rare, elusive animals that may otherwise never be seen. There was also evidence of appreciating the effort put into the design of the enclosure to look as natural as possible. In one case, the respondent seemed to think the animals were better off as captive specimens as opposed to being exposed to feral predators and other dangers in a non-captive situation.

Satisfaction by Stages

With respect to the ratings of the respective stages of the experience outlined in Table 2, a main point of interest was the wider range of ratings provided for specific stages. For example, while the overall satisfaction rating ranged from 3 to 4 (high satisfaction to very high satisfaction), most of the stage ratings ranged from 2 (low satisfaction) to 4 (very high satisfaction). Two stages, ‘Arrival at Barna Mia’ and ‘Post walk refreshments’, had ranges that covered the full rating scale. This is of interest as the overall satisfaction response appeared to mask lower satisfaction ratings allocated to individual components of the experience. This may indicate that the overall satisfaction represents a response in relation to the ‘high points’ of the experience such as the guided walk through the enclosure. This was reflected in the comments associated with overall satisfaction frequently focusing on interaction with the captive wildlife.

While still receiving positive mean ratings, meeting the guide at Old Mill Dam, the drive from the Old Mill Dam to Barna Mia, arrival at Barna Mia and the other information in the building received relatively lower ratings than the remaining stages and the overall satisfaction rating (Figure 3). Statistical analysis comparing the satisfaction ratings of the respective stages using the Friedman test for multiple related samples ($\alpha = 0.05$) indicated there was a significant difference present ($\chi^2 = 39.7, df = 7, p = 0.000$). Comparative analysis of the lowest mean rated stages with the highest rated stages using a Wilcoxon Signed Rank Test for two related samples again indicated a significant difference ($z = -2.28, p < 0.02$).

The mean positive satisfaction response of visitors when mustering at the Old Mill Dam site (mean = 3.54, range = 2–4, std dev. = 0.76) was dominated by first impressions of the guide. Evidence from observation and comments indicated that lower satisfaction levels were associated with visitors being unsure about whether they were in the right location when arriving to meet the guide. This may have been primarily owing to the lack of directional signs relating to the Barna Mia tour meeting point.

The drive to Barna Mia stage was often rated lower (mean = 3.44, range = 2–4, std dev. = 0.78) owing to the dust and concern about getting lost being key issues. Ironically, the night drive through the dark forest could be used to increase the mystery and ‘discovery’ aspects of the tour. Arrival at Barna Mia (mean = 3.57, range = 1–4, std dev. = 0.73) was often rated lower because of feelings that, ‘...it was too dark...’ or it was ‘too cold’. These initial stages of the experience are vital as they potentially ‘set the scene’ for the Barna Mia experience and the lower satisfaction response to these stages may affect the visitor response to the remainder of the evening’s activities.

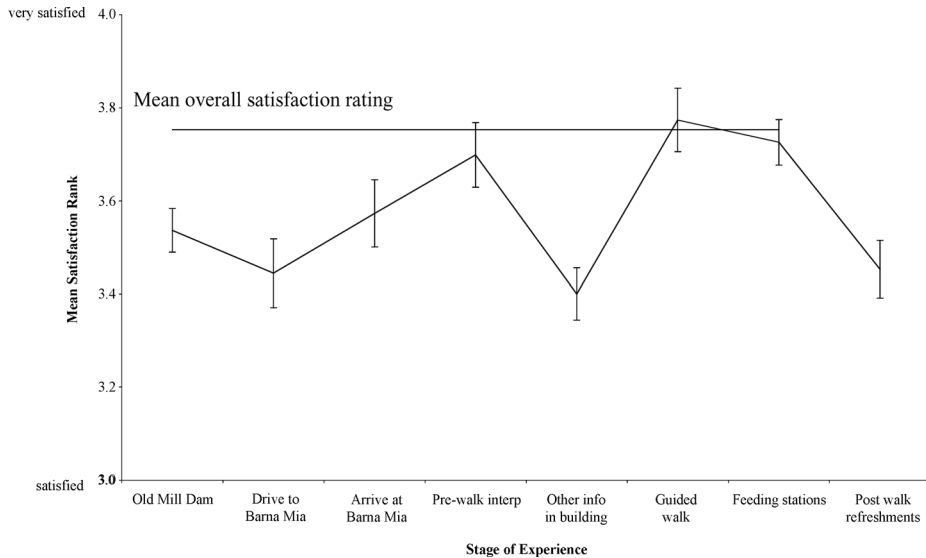


Figure 3 Mean satisfaction ratings per stage of experience as compared with mean overall satisfaction

The lower rankings associated with the other information in the building (mean = 3.4, range = 2–4, std dev. = 0.59), such as wall hung signs outlining Dryandra conservation programmes, appear to be related to the lack of diversity in the media used and the repetitive nature of the information provided. Information displayed in the building at Barna Mia comprised of four display boards outlining the environmental degradation of the woodland and subsequent fox baiting and breeding programmes intended to revitalise the native fauna populations of Dryandra Woodland. This information is also provided in the talk. Personal presentation of information has been described as a ‘more powerful’ mode of communication relative to text based media (Newsome *et al.*, 2002). This is probably owing to the multi-sensory stimulation and social interaction associated with an interpersonal presentation, while a text based display board offers a far more limited experience. In addition, a personal presentation affords the opportunity for information to be customized according to the wishes of the audience, something a text display cannot do. The lower satisfaction rating afforded to the information displayed in the building reflects Falk and Dierkings’ (1992) comment that visitors prefer to spend most of their time looking, smelling, touching and listening, not reading. It seems that the oral presentation has made the information display boards at Barna Mia almost redundant. On the other hand, the text-based material might be used more effectively to value-add to the verbal presentation for those interested in greater depth.

The significantly lower satisfaction rating of the post walk refreshments and merchandise browsing at the conclusion of the tour (mean = 3.45, range = 1–4, std dev. = 0.83) seemed to be related primarily to feelings of tiredness, although most respondents did not provide a reason for the lower ranks given. Of all the aspects of the experience, the post walk refreshments received the highest number of negative scores. Of the 78 respondents providing a rank for this aspect, nine (11%) indicated low satisfaction levels of 1 or 2. The remaining aspects of the experience received at most four low satisfaction ranks except of the ‘other information in building’ which received five low satisfaction ranks.

While 78 survey participants indicated a satisfaction rank for the post walk refreshments, only 27 respondents wrote a reason with about half (14) of the written responses being those associated with the very high satisfaction rankings. The positive comments were solely related to the provision of a hot drink on a cold night and the chance to chat casually with the tour guide. Lower satisfaction rankings often did not have a reason provided. Those that did provide a comment with a low satisfaction rating primarily referred to the lateness of completion of the tour, feeling tired and feeling hungry owing to not having had dinner prior to the tour.

Late nights were invariably a result of larger visitor groups of between 15 and 30 individuals. This seemed to contribute to the inverse correlation between group size and mean satisfaction ranking of the final stage of the tour ($r = -0.45$). As each tour was conducted by a single guide, larger groups were divided into two subgroups for the guided walk through the enclosure. This was both as a means of minimizing stress on the captive fauna and a function of the design of the walk. The narrow paths and limited space and seating

at the feeding stations restricted the number of visitors able to physically access these areas during the walk.

Consequently, division of larger groups into two smaller subgroups resulted in one group waiting in the building while the other took part in the guided walk. As there was only one guide, limited information and no other activities provided in the building, the waiting group was required to find means to entertain themselves. Casual observations of such situations indicated the wait led to obvious signs of impatience and boredom. This was not helped by the extension of the time taken for the evening tour in order to incorporate two walks around the enclosure. Such evenings often ended close to 11 pm as opposed to the regular finish at 9.30 pm. This was additionally exacerbated by many visitors not having eaten dinner prior to the tour as its winter start time was 6.30 pm. Thus feelings of frustration, tiredness and hunger probably led to lower satisfaction scores for the concluding segment of the tour where large groups were involved.

The only other aspect of the experience that was significantly affected by group size was the presentation given before the talk. This also had a significant but moderate negative correlation with group size ($r = -0.40$). The significant relationship between group size and the presentation and end of evening segments of the tour appears to be a function of these particular stages being the two points at which the entire group is together in the same location. This suggests that having large groups of people beyond the number for which the facility was designed induces negative feelings in the participants, possibly as a result of crowding issues. Large groups within the confines of the building may have resulted in undesirable invasion of personal space and a depersonalisation of the experience owing to the reduced opportunity for individual interaction with the guide.

The lack of a significant relationship between group size and the guided walk stages of the experience is possibly a direct result of the tour guide controlling this variable such that no group taken through the enclosure was significantly above the 15 person limit. Unfortunately, the survey did not differentiate between respondents who were divided into the first group and second group to walk through the enclosure. It is possible that the satisfaction rankings of those required to wait for the second walk may have been lower.

Conclusion

The survey response suggests that Barna Mia affords an experience that is highly satisfying owing to the educational component, small group interaction with the guide and the opportunity to see rare native animals in close proximity. While satisfaction of the various aspects that made up the total experience varied somewhat, the lower ratings appeared to be more related to how the tour was conducted as opposed to its content. For example, the lower ratings of the conclusion of the tour while visitors were having drinks and a chat seemed to be based on feelings of tiredness and hunger rather than any dissatisfaction with the merchandise, guide or beverages.

Late nights and guided walk delays occurred with large tour groups, indicating a weakness in the design of Barna Mia as a captive wildlife tourism

attraction. The facility was designed for small group experiences, meaning that demand may only be met with a limited supply. However, rather than the operators restricting numbers and consequently excluding visitors wishing to participate, they allowed large tour groups to take part in the experience. This appears to have been done based on a reluctance to turn tourists away and potentially create ill feelings toward the operator, resulting in loss of custom. However, the immediate benefits gained from allowing large groups to attend the facility (thereby increasing revenue and preventing ill will) resulted in a degradation of the experience reflected in a reduction in satisfaction levels.

Barna Mia was, in part, intended as a means of increasing tourism numbers in Dryandra Woodland and subsequently enhancing public appreciation for the conservation effort being undertaken. However, the currently limited visitor capacity of the facility may prove to be a hindrance to achieving this aim. In addition, the limited visitor capacity may impact on profitability and economic sustainability of the facility itself. Subsequently, there are several future scenarios that potentially face Barna Mia (Table 4).

Possible solutions may include the employment of more guides for large groups (e.g. more than 20). Another options might involve expanding the existing enclosure and constructing a second walk trail loop enabling simultaneous walking group. Shortening the length of the talk to a 15 minute introduction prior to the guided walk may also be warranted. Visitors wanting more detailed information could then read the information signs mounted inside the building. It may also be possible to create a tour package that integrates accommodation at Dryandra Village with a tour of Barna Mia. This has the potential to

Table 4 Options relating to wildlife tourism at Barna Mia and the wildlife tourism product in southwest Western Australia

<i>Option</i>	<i>Action</i>	<i>Issues</i>
Leave Barna Mia as is	Maintain current high levels of visitor satisfaction.	Limited capacity (one tour of a maximum of 15 per night)
Expand Barna Mia	Needs additional guides for the Barna Mia attraction. Market the Dryandra nature based tourism product as an integrated package.	Costs. Management agencies' prime role is not tourism. Developing Barna Mia further without compromising the experience for visitors or impacting on the animals. Management needs relating to an increase in other tourism activities at Dryandra.
Expand wildlife tourism product in SW Western Australia	Link Barna Mia with other captive wildlife facilities and further incorporate tourism operator wildlife experiences that are conducted in the wild.	Different groups need to liaise and cooperate. Increase marketing strategies. Need for increased services. Need for increased accommodation in more remote areas.

include the guide driving a van or minibus to collect the visitors from the village, saving the convoy drive that was consistently ranked as unsatisfactory by visitors in the survey. This arrangement is common for other wilderness style accommodation facilities such as the villages at Cradle Mountain. Rather than expanding the Barna Mia facility and experience itself, a wildlife tourism network including other sanctuaries and wildlife tour operators in a mutual promotion arrangement could be developed. This could effectively expand the wildlife tourism product and its subsequent tourism profile.

Improving the operation of Barna Mia as an attraction in itself and as part of the Dryandra Woodland product may serve to somewhat improve its success as an attraction. However, as the data demonstrates that an innately attractive tourism experience cannot work without appropriate integration within the specific wildlife tourism product of Dryandra Woodland, coordination with tourism on a regional scale is also important. This is both in terms of improving the performance of Barna Mia and Dryandra Woodland as well as the benefits of the wildlife tourism product to the community

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