


Jurabi Turtle Centre

NINGALOO REEF, WESTERN AUSTRALIA

2007-2008 REPORT



Department of Environment and Conservation

Our environment, our future 

ACKNOWLEDGEMENTS

The success of the Jurabi Turtle Centre 2007-08 Program is largely due to a number of key stakeholders for their continued support with turtle conservation in Ningaloo Marine Park. These include: Woodside Energy Ltd, Mitsui Ltd, Shire of Exmouth, Department of Environment and Conservation, Exmouth Visitor Centre, Cape Conservation Group, Care Animal Rescue Research and Education Group, community volunteers and guides, local businesses and the broader Exmouth community.

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1.0 Introduction

The Jurabi Turtle Centre (JTC) is an interpretative centre located on the North West Cape in the Jurabi Coastal Park. It is situated between Hunters and Mauritius beaches, adjacent to a popular rookery for three threatened species of marine turtles the Green (*Chelonian mydas*), Loggerhead (*Caretta caretta*) and Hawksbill Turtle (*Eretmochelys imbricata*). These turtles nest along beaches of Ningaloo Marine Park from November to March, annually.



Photograph A & B) The Jurabi Turtle Centre (JTC), Aerial photograph of the JTC

A significant threat faced by marine turtles on the North West Cape is disturbance during the nesting process by people seeking a turtle viewing opportunity. In recognition of this problem the JTC was constructed as a collaborative venture between the Shire of Exmouth and the Department of Environment and Conservation (DEC). The centre was built to enhance turtle conservation by focusing visitors into an area suitable for distribution of conservation-related information such as appropriate interaction protocols and facilitating a sustainable turtle tourism program.

The expected outcomes of the 2007/08 JTC Program were:

1. Greater community understanding of turtle conservation;
2. Greater community awareness of the significance of the JTC for management of visitor-turtle interaction;
3. Greater compliance with the Turtle Watchers Code of Conduct;
4. Increase in acceptable visitor-turtle interaction;
5. Key community stakeholder workshop to discuss future management of the JTC and turtle-visitor interaction.

The mission of the centre is defined in the JTC, Ningaloo Draft Business and Operational Plan (Macgregor and Hogstrom, DEC, 2003):

“The purpose of the Jurabi Turtle Centre venture is to work in collaboration with stakeholders and the community to promote conservation of marine turtles and protect biodiversity values while providing access to an informative and enriching wildlife experience.”

1.1 Visitor-Turtle Interaction Management

Several operational models for managing visitor-turtle interaction have been trialled since the commencement of the JTC. Each approach presented its own challenges and which are summarised below:

Commercial Tour Operator's

- Non financially viable/sustainable business.
- Lack of continuity in staff: high staff turnovers (private sector).

- Limits to staff changes during the season: licence restrictions on training - Turtle Tour Guide Training Course
- Limited volunteer involvement: conflict of interest between parties when volunteer efforts assist for commercial gain.
- Non-compliance with the Turtle Watchers Code of Conduct by SGVs.
- Unreliable wildlife experience: potential for nesting frequency and seasonal variability to impact on the number of turtles encountered.

Volunteers

- Insufficient training in appropriate visitor-turtle interaction protocols.
- Reliance on community support: Commitment of volunteers to assist staffing the JTC and guided activities. Volunteer concerns approaching SGVs on beaches during night time, in relation to the code of conduct.

DEC

- Lack of recurrent funding: sources of financial support for staff and operational costs.
- Limited potential to generate revenue.
- Isolated location of the centre: inaccessible to visitors dependant on public transport (approximately 18 kms from Exmouth town centre). Inadequate compliance by DEC staff due to limited funding and time constraints.
- Loss of DEC operational involvement with the JTC.
- Loss of Exmouth Shire operational involvement.
- Unreliable wildlife experience: potential for nesting frequency and seasonal variability to impact on the number of turtles encountered.
- Loss of community support/volunteer effort:
 - Conflict of interest, volunteer services provided for commercial gain.
 - Increase in non-compliance with appropriate interaction protocols (the Turtle Watchers Code of Conduct) by SGVs.
 - Management issues associated with beach closures within Jurabi Coastal Park.
 - Less volunteers interacting with SGVs may lead to an increase in turtle disturbance.
- Effective management of turtle visitor interaction Jurabi Coastal Park



Photograph C & D) The JTC, Interpretation displays at the JTC

A review of operations with a goal to develop an effective model was conducted by DEC in May 2007. The following five outcomes are considered critical components in the long term management of visitor-turtle interaction.

1) *Marine Turtle Conservation*

Marine turtle conservation is the highest priority and the overarching goal of all JTC operations. The baseline philosophy here is protection and conservation of nesting turtles can be achieved through minimising human disturbance and impact to an acceptable level.

2) *Active DEC involvement*

DEC as the custodian and managing body of marine turtle's both on and off the reserve has a statutory responsibility for the management of all turtle interactions including: compliance with statutory requirements; providing public education and interpretive material at the JTC, relevant turtle rookery beach access points and other key interpretive nodes within Ningaloo Marine Park; management of self guided visitors; and management of Commercial Tour Operators.

3) *Active Local Community Involvement*

The long term conservation of nesting marine turtle species along the Jurabi Coast requires active local community involvement. This can be achieved through a collaborative effort of distributing conservation related information and understanding appropriate protocols for turtle- visitor interaction.

4) *Self Guided Visitors (SGVs)*

SGVs participating in turtle interactions present the greatest management challenge to DEC. This group utilises its own transport to visit numerous North-west beaches at night and is under no supervision to comply with the Turtle Watchers Code of Conduct.

5) *Commercial Tour Operators (CTOs)*

It is envisaged that an appropriate number of CTOs can continue to conduct turtle interactions under appropriate license conditions, best issued through an Expression of Interest process. As some interactions may occur off reserve, Wildlife Interaction licenses will be required.

At the commencement of the 2007/08 marine turtle nesting season, visitor-turtle interaction along Jurabi Coastal Park was to be managed by commercial guided tours, with DEC conducting compliance patrols to capture self guided visitor interest.

Ningaloo Reef Retreat (NRR), a commercial tour operator was issued a licence to operate tours utilising the facilities at the JTC. At this stage DEC was running compliance patrols along Jurabi Coastal Park. Due to staffing difficulties NRR terminated their commercial tours for the season.

Subsequently, DEC was required to implement an interpretive program to compliment compliance measures for managing visitor-turtle interaction along the Jurabi Coast. This was made possible through funding received from Woodside Energy Ltd and Mitsui Ltd.

The program operated out of the JTC and consisted of marine turtle educational presentations and supervised activities to facilitate appropriate turtle interaction protocols, in accordance with West Australian Sate Legislation.

2.0 Operations

2.1 The JTC Team

Eight guides assisted with the coordination of JTC nights this season, including both local community members and DEC staff.



Dani Rob
Local Community Guide
Whale Shark Education
-Kings Ningaloo Reef Cape
Tours



Kate Macgregor
Local Community Guide
President - Cape
Conservation Group



Deb Kezich
Local Community Guide
Administration - Shire of
Exmouth



Tegan Gourlay
Community Turtle
Education Officer, DEC
Cape Conservation Group
& CA.R.E member



Tristan Simpson
Ningaloo Turtle Program
Coordinator, DEC/WWF/
Cape Conservation Group
& CA.R.E member



Tony Howard
Interpretation Project
Officer, DEC
Cape



Jamie Campbell
Education Officer, DEC

Group



Julie & Baillie Waller
Local Community Guides
Psychologist
Cape Conservation
Member

Photograph E) The JTC Team

2.2 JTC Staff Roles

The 2007/08 JTC season was staffed by both Turtle Interpretation Guides and JTC volunteers. Certification in the TAFE Turtle Tour Guiding Course was a requirement of becoming an Interpretation Guide. The tasks that were undertaken by each role are summarised in Table 1.1

Table 1: JTC staff roles and tasks

Role Title	Tasks
Turtle Interpretation Guides	<ul style="list-style-type: none"> • Greeting and interacting with visitors • Setting up/packing up of equipment for presentations • Delivering presentations • Providing guided experiences • Completing monitoring sheets and collating information - compiling visitor statistics, recording turtle observations • Providing information and explaining turtle interaction protocol (CoC) to tourists conducting self-guided turtle observations
JTC Volunteers	<ul style="list-style-type: none"> • Greeting and interacting with visitors • Setting up/packing up of equipment for presentations • Assisting in guided experiences • Assisting in providing information to tourists conducting self-guided turtle observations • Completing monitoring sheets and collating information- compiling visitor statistics, recording turtle observations

2.3 JTC Operations

Guided activities operated out of the JTC from the 15th January to the 1st March 2008, every Tuesday, Thursday and Saturday evenings. These ran for 18 nights in total with the exception of Australia Day (26th Jan) and Tues 19th and Thurs 21st Feb due to Tropical Cyclone Nicolas.

Due to the high numbers of participants two Interpretation Guides were present every night the JTC operated, to comply with DEC licence conditions. Under these conditions a guide is allowed a maximum of fifteen people per tour and one assistant. Between one and two JTC volunteers assisted guides on majority of the nights the JTC was in operation.

Guides and volunteers welcomed visitors to the centre providing conservation related information, including the Turtle Watchers Code of Conduct (CoC), as well as collecting visitor survey information.

The low level lighting allowed visitors to peruse permanent interpretation displays at the centre and also provided a source of renewable electricity which allowed guides to deliver a 25 minute PowerPoint presentation using a portable projector and screen.



Photograph F & G) Interpretation displays at the JTC, Interpretation guide presenting information at the JTC

Guides and volunteers would then walk participants down the JTC access way to Hunters Beach directly adjacent to the JTC. Here groups would scout the beaches and participate in supervised turtle interaction activities.



Photograph H & I) Participants viewing a presentation at the JTC, Hunters beach (adjacent to the JTC)

3.0 Marketing and Print Media

Flyers promoting JTC Guided Activities, along with Turtle Watchers CoC information sheets were distributed around Exmouth, to the following: DEC Milyering Visitor Centre, DEC Exmouth District Office, DEC Cape Range National Park Entrance Gate, Exmouth Visitor Centre, Caravan Parks, Dive Centres, Exmouth Post Office and Exmouth Holiday Accommodation.

Educational posters were also displayed at both the Exmouth Visitor Centre and the Milyering Visitor Centre, comprising of marine turtle information and the Turtle Watchers CoC. Permanent brochure holders are also located within the JTC, providing visitors with marine turtle CoC information all year round.

Jurabi Turtle Centre
NINGALOO REEF, WESTERN AUSTRALIA

Turtle Visitor Interaction

Guided Activities at Jurabi Turtle Centre

The Department of Environment and Conservation welcomes visitors to join us to learn about and observe female turtles nesting in their natural environment.

Come and enjoy this unique experience!

When: Tuesdays, Thursdays and Saturdays
(except for Australia Day Saturday Jan. 26th)

Where: Meet at Jurabi Turtle Centre at 8.00pm
(just past Lighthouse turn off)

What to Bring: Please wear closed in shoes, long pants and bring drinking water and a jumper.

PLEASE TAKE CARE AND WATCH OUT FOR WILDLIFE WHEN DRIVING
Be Wildlife Wise

For more details: DEC Exmouth District 9947 8000
Exmouth Visitors Centre 9949 1179

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Photograph J) JTC Promotion Flyer 2008

Marine Turtles

In Ningaloo Marine Park

Turtle Watchers Code of Conduct

Marine turtles are threatened species. State and federal legislation provides penalties for disturbing marine turtles.

Ningaloo Marine Park, off the North West Cape of Western Australia offers a fantastic opportunity for visitors to view marine turtles in the natural environment. Green turtles (*Chelonia mydas*), loggerhead turtles (*Caretta caretta*) and hawksbill turtles (*Erymnochelys imbricata*), three of the world's seven species of marine turtles, nest on mainland beaches adjacent to Ningaloo Reef during the summer months from November to March.

The Department of Environment and Conservation (DEC) encourages those wishing to view nesting marine turtles to participate in a guided experience. The Jurabi Turtle Centre provides informative displays and accredited guides with ready access to turtle nesting beaches and detailed information of turtle ecology and threats.

There are three important stages in turtle reproductive process: mating, nesting and hatching, all of which take place along the beaches of the Ningaloo Marine Park. If done correctly turtles can be observed without undue disturbance to the breeding process. For this reason DEC has developed a Turtle Watchers Code of Conduct for visitors to follow:

Nesting

Disturbance of nesting marine turtles, by people seeking a viewing experience, may affect their nesting success and the long-term survival of the species. It is important that you follow the Code of Conduct below to minimise your effects on nesting turtles.

- Walk along the beach at the waters edge looking for tracks in the wet sand or emerging or returning turtles.
- Avoid using lights and torches when walking along the beach - this discourages turtles from emerging and may make nesting turtles return to the water.
- Do not shine lights on turtles.
- If a turtle is encountered, calmly "STOP", where you are, "DROP" sit down and act like a "ROCK". Wait for her move up the beach to begin digging.
- Always keep out of her line of sight or stay very still if you are within her sight.
- Avoid excess noise and sudden movement at all times.
- When approaching a nesting turtle crawl up behind her on your stomach ("prone/side crawl").
- Always position yourself behind the turtle and stay low (sit, crouch or lie on the sand). If you are getting covered in sand as she digs you are too close!
- Be patient. She may abandon the nest for a variety of reasons including hitting an obstacle or the sand being too dry.
- Wait until she is laying before moving closer. She will be quite still when laying her eggs - if sand is spraying or she is using her flippers, she is not laying.
- Give her enough space to camouflage the nest.
- Let her return to the ocean without interruption or getting between her and the ocean.
- Avoid all flash photography.
- Please depart all beaches by 11pm to allow a period of undisturbed nesting to occur.

Mating

There are only a few known mating areas in Ningaloo Marine Park. In these areas turtles are often seen resting at the waters edge. During this time they are heavily stressed and are extremely vulnerable to both natural and human impacts. Even passive watchers from the shore can cause turtles to re-enter the water and may result in them leaving the mating area or even drowning. It is critical that NO disturbance to turtles occurs in these areas.

- Do not take motorised or sailing craft into mating areas. Even paddle craft should take care around turtle mating aggregations.
- Dogs are not permitted in Cape Range National Park or Ningaloo Marine Park.
- If a mating area is observed stand well back from the shore - at least 30m, so nesting turtles are not forced back into the water prematurely.
- Do not disturb resting, sleeping or mating turtles.
- Making unnecessary contact with turtles is an offence under the Conservation and Land Management and Wildlife Conservation Acts.
- Always drive your vessel with care in Marine Park waters to avoid injuring turtles.

Please turn over for an easy to follow chart for viewing turtle's nesting

Department of Environment and Conservation
Australian Government
Department of the Environment and Water Resources
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Marine Turtles

In Ningaloo Marine Park

Turtle Watchers Code of Conduct

The Department of Environment and Conservation encourages you to participate in a guided experience. Should you encounter a turtle by chance, please abide by the Turtle Watchers Code of Conduct

Stage of Nesting	Identification of Stage	Time taken	Vulnerability to disturbance	Torch Use	Distance from Turtle
1. Leaving the water and crossing the beach	Crawls from the ocean toward the dunes/sand	5-20 mins	HIGH	No	Stay still - at least 15m away
2. Digging the body pit	Large quantities of sand flying through the air. Uses front flippers only	20-40 mins	HIGH	No	Stay still - at least 15m away
3. Excavating the egg chamber	Uses rear flippers only creating a rocking motion as it digs	10-20 mins	MEDIUM	No	3 people at a time only. At least 1m away behind turtle
4. Laying eggs	Is very still with gentle heaving	3-10 mins	LOW	OK from behind	Stay at least 1m away behind turtle
5. Covering & camouflaging the nest	Gradually moves forward with large quantities of sand flying through the air	20-40 mins	LOW	No	Stay still - at least 2m behind turtle
6. Returning to the ocean.	Crawls from the dunes/land toward the ocean	5-15 mins	LOW	No	Remain 2m behind turtle

Hatching

Under natural conditions very few marine turtle hatchlings survive to adulthood. Additional human induced pressures have further decreased their likelihood of survival. Please follow the Code of Conduct below to minimise human impact on hatchlings:

- Do not use lights or flash photography - this will disorientate hatchlings.
- Stand back from the nest - do not compact the sand - other hatchlings may still be in the nest waiting to emerge
- Do not get between the hatchlings and the ocean.
- Do not touch the hatchlings.
- Let hatchlings make their own way down the beach. It is important that hatchlings use their flippers to exercise their lungs allowing them to swim and dive when they reach the water.
- Stand to the side rather than crossing their path - hatchlings can get stuck in footprints.
- Do not drive your vehicle on turtle nesting beaches. Hatchlings can become trapped in wheel ruts greatly increasing the chance of death from dehydration and predation.

Please ensure you abide by the Turtle Watchers Code of Conduct. Ningaloo marine turtles need your help. Thank you for your co-operation

Department of Environment and Conservation
WOODSIDE

Photograph K) The Turtle Watchers Code of Conduct (Pg 1&2)

4.0 Community Involvement

4.1 Volunteer Effort

Eighteen volunteers contributed 89 hours toward the JTC program this season, to an approximate value of \$4000.00, including on-costs. Both the local community and Ningaloo Turtle Program external volunteers participated in the program.

4.2 JTC Local Community Night

On Wednesday 6th February 2008 the JTC held a 'wine and cheese night' for key members of Exmouth community to provide information about the program and to thank them for their continued support in turtle conservation in Ningaloo Marine Park.



Photograph L & M) Local Community Night participants at the JTC

Invitees included members and staff from Exmouth Shire; Exmouth Visitor Centre; Exmouth Primary School and District High School; Conservation Animal rescue Research and Education Group; Cape Conservation Group; Cape Board Riders Association; Woodside Energy Ltd; Recreational Fishing Advisory Committee; and the Northern Guardian Newspaper.

The rationale behind the local night was to provide local participants with an adequate understanding of the Turtle Watchers CoC and raise awareness about the importance of Jurabi Coastal Park beaches for the nesting process of protected marine turtle species. This information could then be distributed amongst the broader local community encouraging a greater appreciation of the unique experience available on our doorstep.



Photograph N & O) Local Community Night participants at the JTC, JTC Staff (L to R) Tony Howard; Jennie Cary (District Manager DEC Exmouth); Tegan Gourlay; Dani Rob and Jamie Campbell

5.0 Finance

Finance for the JTC 2007/08 operations was provided by Woodside Energy Ltd and Mitsui Ltd through the Community Partnerships Program. Financial and in kind support was also provided by DEC (financial report available upon request). The JTC 2007/08 Seasonal Budget breakdown is summarised in Table 2.

Table 2: Breakdown of JTC Season Budget (21 November 2007 – 21 April 2008) – adapted from DEC Account Program

Description (21Nov 07 - 21April 08)	Expenditures
Community Partnerships Grant	+30,160.00
DEC JTC Project Officer Salary	-15,831.73
DEC Staff Salaries - Normal	-3,095.00
DEC Staff Salaries - OT	-2,616.79
External Community Guide Wages - Normal	-5,927.43
External Community Guide Wages - OT	-8,465.80
Operational expenses	-966.99
Total Expenditure	\$36,903.74

6.0 Occupational Health and Safety

Occupational Health and Safety (OH&S) guidelines for the JTC are specified within induction procedures for Turtle Interpretation Guides. Volunteers are made aware of these guidelines before commencement of the JTC Guided Activity. There were no OH&S incidents or issues recorded this year.

6.1 Visitor Risk Management

No major visitor risk management issues arose during the 2007/08 season. Due to harsh environmental elements associated with the location of the JTC ongoing maintenance is required. Maintenance and operational requirements are summarised in Table 3.

Table 3: Ongoing JTC maintenance/operational requirements.

JTC Maintenance	Approximate Cost
1. Display cabinets - replacement required	2,500.00
2. Surround sign replacement	5,000.00
3. Light plinths (walk trail lights including lights surrounds)	2,500.00
4. Welcome sign replacement	1,000.00
5. Timber seat repairs	500.00
6. Existing track upgrade	500.00
7. Development of new track (JTC to Mauritius beach)	2,500.00
Total	14,500.00

7.0 Visitor Data and Analysis

7.1 JTC Visitor Data and Analysis

Data collected by guides and volunteers showed 495 visitors participated in the JTC guided activities over the 18 nights the program was in operation. The average number of participants per night was 27, with peak visitation being in the fourth week of the program (4-11 February 2008). *Please note: only two tours operated during week 2 due to Australia Day and only one tour operated during week 6 (18-24 February 2008) due to Tropical Cyclone Nicholas (refer to Figure 1).*

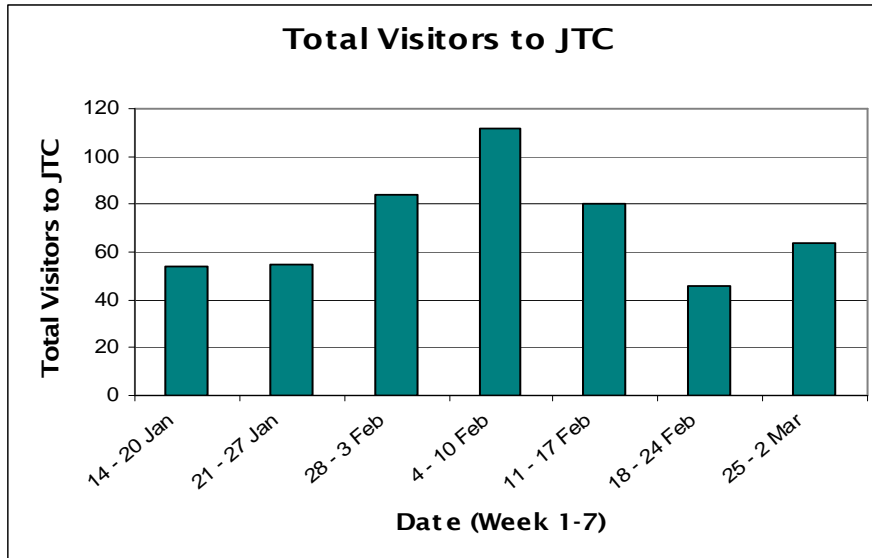


Figure 1: Total number of visitors to the JTC during the 7 week program.

Of the 495 visitors that participated in the program, 68% were surveyed (320 adults and 21 children). Majority of these visitors (47%) received information from Exmouth Visitor Centre about the guided activities. This was followed by DEC Information Centres, word of mouth and Caravan Parks (refer to Figure 2).

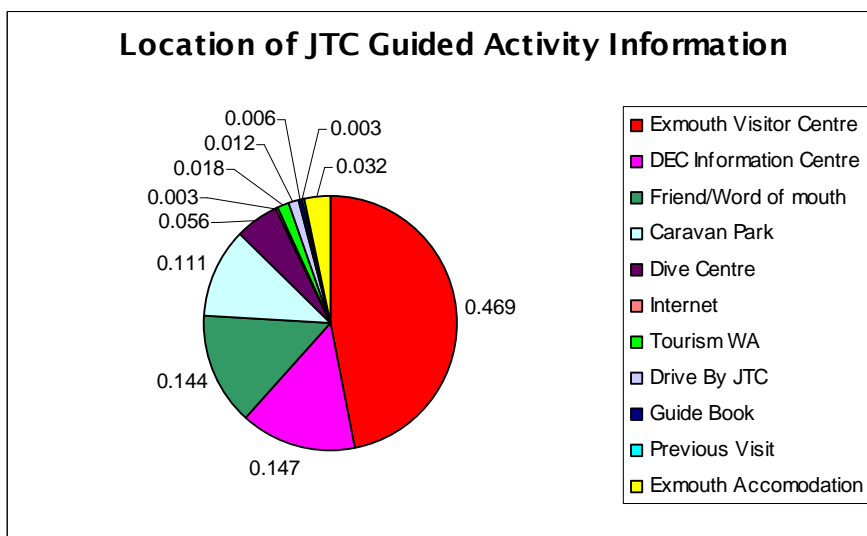


Figure 2: Location of where JTC guided activity information was made available to visitors.

Of the participants surveyed 81% had not previously been to the JTC while 19% had. Approximately half (51%) of the surveyed participants had previously heard of the Turtle Watchers CoC, while half (49%) had not (refer to Table 4).

Table 4: Visitor survey information - JTC participation and CoC Knowledge, adapted from 2007/08 JTC Visitor Survey Analysis Summary.

	Yes	No	Total
First visit to JTC	277	64	341
Knowledge of CoC (Total)	175	166	341

Of the 175 participants that had previously heard of the Turtle Watchers CoC, 85% had read the CoC brochure (either the brochure itself or as part of the CoC poster displayed in both the Exmouth Visitor Centre and Milyering Visitor Centre) (refer to Figure 3).

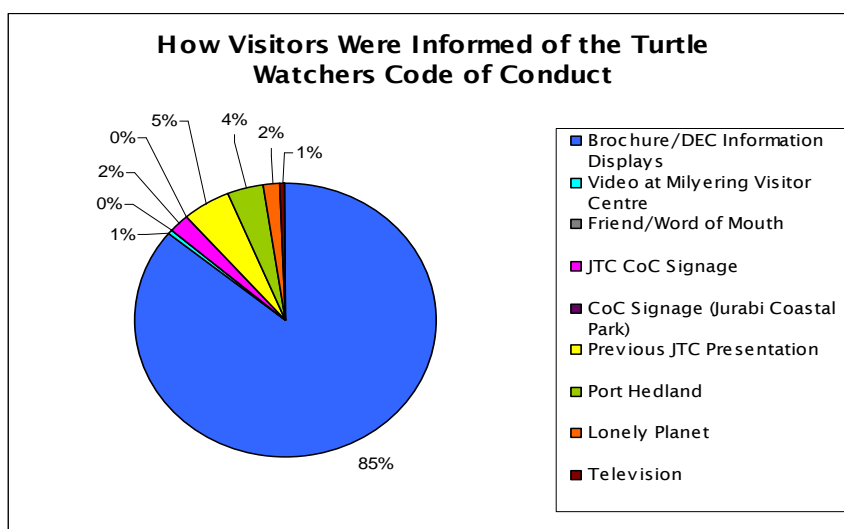


Figure 3: Percentage of how visitors became familiar with the Turtle Watchers Code of Conduct.

5% of surveyed participants had previously observed nesting in Ningaloo Marine Park, majority of which observed turtles in Coral Bay, Hunters Beach and Wobiri Beach (both in Jurabi Coastal Park).

When asked why visitors had observed turtles at these specific locations, majority replied because of CoC Signage along the Jurabi Coast and because visitors were staying there (either Coral Bay or Reef Retreat).

7.2 Self Guided Visitor-Turtle Interaction Data and Analysis

A duty of the Interpretation Guides was to monitor visitor-turtle interaction on the beaches adjacent to the JTC and to assist SGVs to follow appropriate interaction protocols.

Data collected showed 49 SGVs were encountered while conducting the supervised activities along Hunters Beach throughout the JTC season. Of these 55% decided to join the guided activity. *Please note: that only two tours operated during week 2 due to Australia Day and only one tour operated during week 6 (18-24th February 2008) due to Tropical Cyclone Nicholas (refer to Figure 4).*

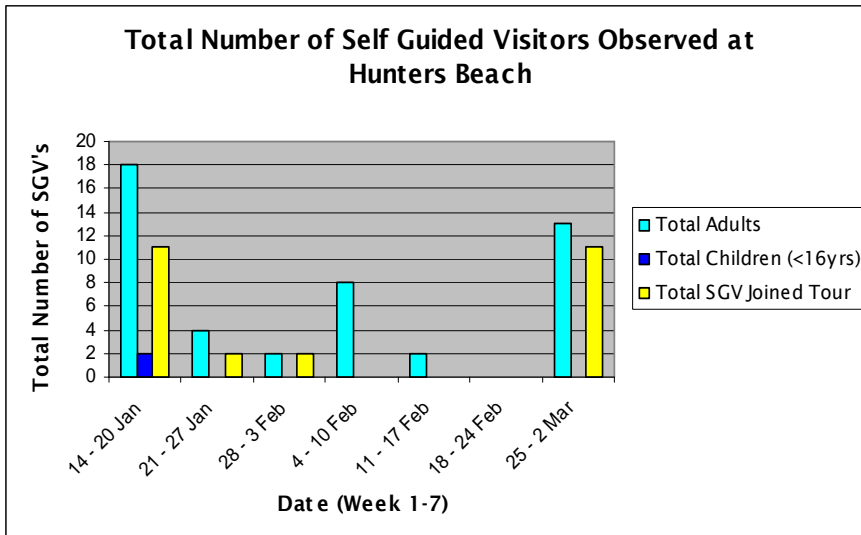


Figure 4: Number of self guided visitors encountered at Hunters Beach and the number that joined a guided activity.

7.3 SGV Compliance with the Turtle Watchers Code of Conduct

The main CoC breach observed was not walking along high tide (33%), followed by using a torch or flashlight (27%) and making sudden movements (19%). (Refer to Figure 5).

Of the SGVs that were surveyed, two marine turtles and a group of turtle hatchlings were encountered (1 group – turtle only and 1 group – turtle and hatchlings). Body pitting and returning phases were seen by both groups when they encountered the turtles.

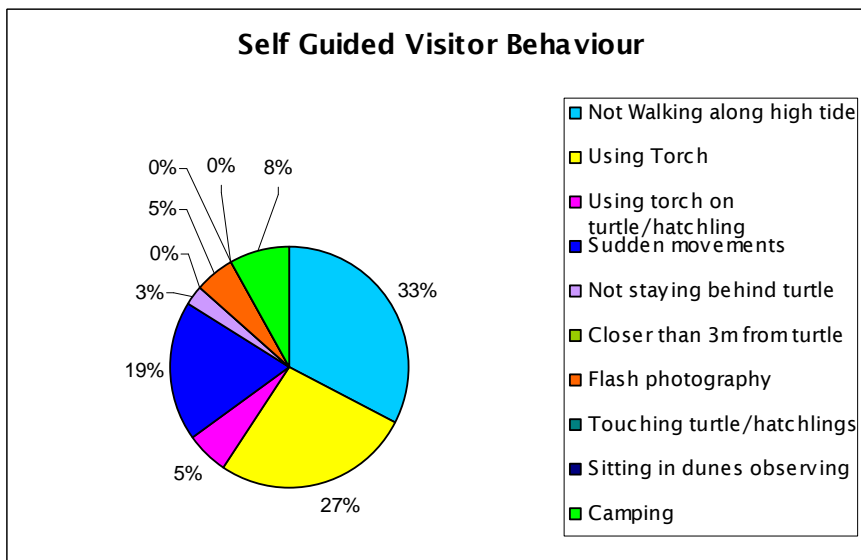


Figure 5: Breaches of the Turtle Watchers CoC from self guided visitor behaviour observed by Interpretation Guides.

Of the SGVs encountered, 22% (11 people) had previously visited the JTC and 10% (5 people) were aware of the Turtle Watchers CoC through reading the brochure. Three out of five of SGVs remembered not to use a torch and not to get too close to turtles, while two out of five knew to walk along the high tide and to move slowly (refer to Figure 6).

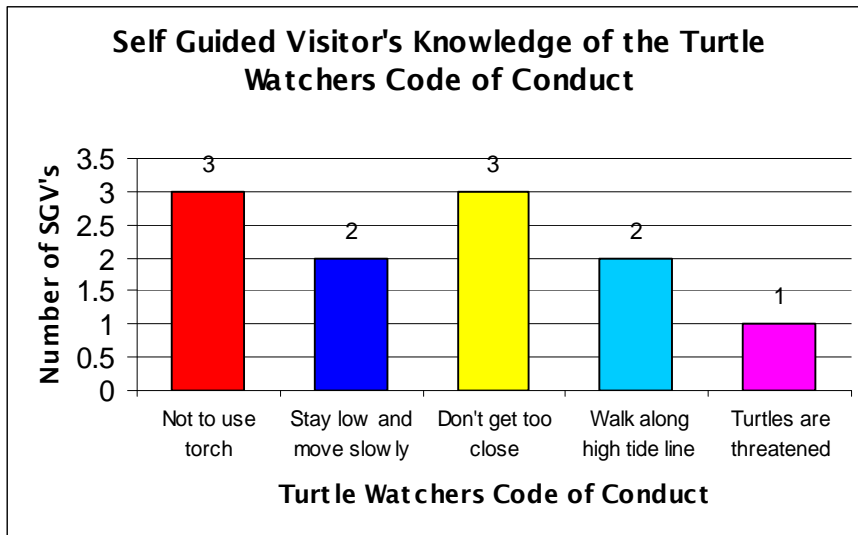


Figure 6: Self guided visitor's knowledge of the Turtle Watchers Code of Conduct.

8.0 Summary of Expected Outcomes

Overall the 2007/08 JTC program was a huge success in contributing to the management of turtle-visitor interaction within the Jurabi Coastal Park. The expected outcomes are outlined below:

8.1 Greater community understanding of turtle conservation

Partially Achieved:

Due to resource and time constraints effective education of turtle conservation, highlighting the significance of nesting beaches along the Jurabi coast was minimal prior to the start of the JTC activity nights. Although information about the JTC guided activities and CoC was heavily distributed throughout the Exmouth Town Centre and surrounding areas, local community support for the JTC program was still quite minimal.

More emphasis needs to be placed on rallying local support not only to improve the perception of the program amongst the community but to place a sense of ownership over the unique wildlife experience available in Exmouth. It is necessary for the local community to be involved in both the protection of turtles and visitor education for the long term conservation of marine turtles within Ningaloo Marine Park (NMP).

Only half of the participants that visited the JTC and a small fraction of the SGVs encountered were aware of the Turtle Watchers CoC. These results highlight the need for more effective promotion of the visitor-turtle interaction protocols (CoC) within the Exmouth community and broader Ningaloo Region.

8.2 Greater community awareness of the significance of the JTC for management of visitor-turtle interaction

Partially Achieved:

The JTC Local Community Night was a huge success. A total of 25 community members attended, with all participants providing very positive feedback about the guided activities and its chief role in the management of turtle visitor interaction along the Jurabi Coast. However due to the late start of the program, the aim of the Community Night - the distribution of turtle conservation messages to the broader Exmouth community - was only partly achieved.

Local volunteer effort was reasonably low for the 2007/08 JTC program, with certified local interaction guides also limited. Again this may have been avoided with effective pre-season promotion of the JTC program and potential employment opportunities. Allowing the community to be directly involved in JTC operations will assist in the long term viability of the centre as a means of turtle conservation management.

8.3 Greater compliance with the Turtle Watchers Code of Conduct

Partially Achieved:

With the exception of Hunters Beach (directly adjacent to the JTC), Jurabi Coastal Park beaches were only partly manned throughout the 2007/08 turtle nesting season, during DEC routine compliance patrols. This included major turtle rookery beaches such as Wobiri and Mauritius. Subsequently no data was collected as to whether or not SGVs visited these specific beaches and followed appropriate interaction protocols.

The Turtle Watchers CoC brochure proved to be the most effective method of informing visitors of the CoC (either the brochure itself or as part of the CoC poster displayed in both the Exmouth Visitor Centre and Milyering Visitor Centre). Distribution of the CoC however, was only partly successful with 49% of surveyed visitors having no previous knowledge of the CoC (as outlined in expected outcome 8.1). The JTC

program informed participants of the CoC, thus increasing the chance of them complying with it in the future. However, without sufficient data potential compliance with the CoC by visitors that had previously participated in a JTC guided activity can only be a presumption.

More emphasis needs to be placed on promoting the CoC at a national level to increase public awareness of the significance of the nesting stage in a turtle's reproductive cycle and the importance of a suitable undisturbed environment for this to take place.

Please note:

- *The number of SGVs encountered was significantly low (49 SGVs) due to the shortened time frame of the program and limited beach survey access (only Hunters Beach was surveyed for SGVs). Therefore data collected and used is not representative of the number of SGVs that participated in a turtle interaction during the 2007/08 nesting season.*
- *Due to the insufficient data collected on SGV turtle encounters no correlation can be made between SGVs compliance with the CoC and turtle disturbance.*

Data collected from the 49 SGVs encountered on Hunters Beach shows a token 10% were aware of the CoC. Therefore we can assume that SGVs were entering beaches along the Jurabi Coast unaware of the CoC. Current signage throughout Jurabi Coastal Park is inconsistent and outdated when compared to current CoC brochure. This may confuse SGVs and prevent them complying with the CoC.

8.4 Increase in acceptable visitor-turtle interaction

Partially Achieved:

As determined by the review of operations in 2007, supervised visitor-turtle interactions are deemed an effective way to minimise disturbance on nesting marine turtles. Considering over the 18 nights the JTC operated a total of 495 visitors participated, the program has achieved this outcome. *Please note: Visitors participating in a guided activity had negligible non-compliance with the Turtle Watchers CoC.*

Out of the SGVs encountered 55% joined the guided activities, thus again increasing the level of acceptable turtle-visitor interaction. However, even though 47 SGVs were informed of turtle interaction protocols and 55% joined an activity, this does not mean any of the SGVs continued to comply with the Turtle Watchers CoC when visiting beaches on following nights. A combination of supervised activities and educational compliance patrols to monitor SGVs along the Jurabi Coast will be the most effective way to increase appropriate turtle-visitor interaction.

The peak visitation periods to Exmouth and the Ningaloo Reef (namely Christmas and New Year Holidays) were not captured due to program only partly covering the 2007/08 nesting season. Data collected shows an increase in JTC participants during February however, this may just be a coincidence with the number of visitors to the area at that time and does not necessarily reflect a correlation with data available in this report.

8.5 Key community stakeholder workshop to discuss future management of the JTC and turtle-visitor interaction

Achieved:

On 13th February 2008 DEC coordinated a workshop for key participants to discuss future management options for the JTC. Attendees included: David O'Malley (Australia's Coral Coast), Mike Flood (Tourism WA), Phil Anastasakis, (Exmouth Shire), Rod Quartermain, Roland Mau, Ray DeJong, and Tegan Gourlay (DEC), Kate McGregor (Cape Conservation Group), Karen Holland (Exmouth Visitor Centre) and Paul Witter (Ningaloo Reef Retreat).

Three potential operational models were developed based on workshop discussions.

- Model 1: Free Turtle Interaction Tours
- Model 2: Paid Turtle Interaction Tours
- Model 3: Combined Free and Paid Turtle Interaction Tours

Action Items:

- DEC is in the process of drafting details of the JTC proposed operational models. Once finalised approval is required from both DEC and the Exmouth Shire Council, after which there will be consultation with key community and broader stakeholders.

9.0 Future Recommendations

Outlined below are appropriate recommendations for the potential use of JTC operations as a management tool for visitor-turtle interaction within NMP:

9.1 Greater Community understanding of turtle conservation

Recommendations:

- Pre-season promotion of marine turtle conservation and how locals can assist/support marine turtles within NMP.
- Target all accommodation outlets in NMP distributing both the JTC guided activities and the Turtle Watchers CoC.
- Pre-season training for visitor centre staff (both DEC employees and non-DEC employees) on visitor-turtle interaction protocols.
- A transportable marine turtle information stall to be set up in several locations throughout Exmouth during the nesting season (including Exmouth Schools, local markets and shopping mall).
- Promotion of the TAFE accredited Turtle Tour Guiding Course highlighting potential employment for the local community in the summer (off-peak season).
- Volunteer pre-season information nights and training to attract/increase volunteer effort.

9.2 Greater community awareness of the significance of the JTC for management of visitor-turtle interaction

Recommendations:

- Local Community Night to be held prior to the start of the JTC program.
- Invitees to include additional key community members: marine related industry such as Exmouth shop staff, particularly dive shop staff.
- Marine turtle presentations to be held at Exmouth Primary and District High School prior to the turtle nesting season.
- Marine turtle presentations to be held weekly throughout the nesting season to increase awareness of turtle nesting processes within NMP (to be held within Exmouth Town Centre).

9.3 Greater compliance with the Turtle Watchers Code of Conduct

Recommendations:

- Broaden education/information scope to include all of NMP.
- Additional pre season education and awareness is essential.
- Additional information presentations, potentially in Exmouth to capture visitors with no transport, to highlight the CoC and its importance.
- All CoC information to be streamlined and consistent throughout NMP. This includes all printed material, signage and discussion by authorized personal

9.4 Increase in acceptable visitor-turtle interaction

Recommendations:

- JTC guided activities to be promoted within NMP, channelling people through the JTC to gain an understanding of the CoC and visitor-turtle interaction protocols.
- Future programs to commence at the start of the nesting season. The number of activities should be increased throughout the peak visitation period - Christmas and New Year.
- Additional compliance and education patrols to be provided by DEC staff throughout the nesting season including peak periods.