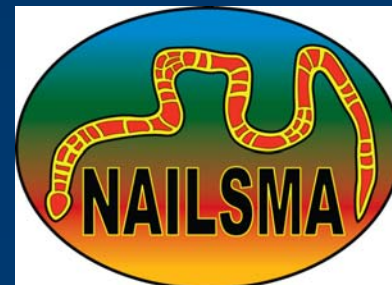




THE AUSTRALIAN NATIONAL UNIVERSITY

## Valuing Indigenous harvest and management of *odorr* (dugong) and *goorlil* (marine turtles): The Bardi Jawi case study

A collaborative research project between the Centre for Aboriginal Economic Policy Research, ANU and the Bardi Jawi Rangers, Kimberley Land Council funded by NAILSMA/Tropical Savannas CRC  
Presentation by Geoff Buchanan, Daniel Oades & Mark Shadforth, CAEPR Seminar Series, ANU, Canberra, 27 August 2008



# OUTLINE OF PRESENTATION

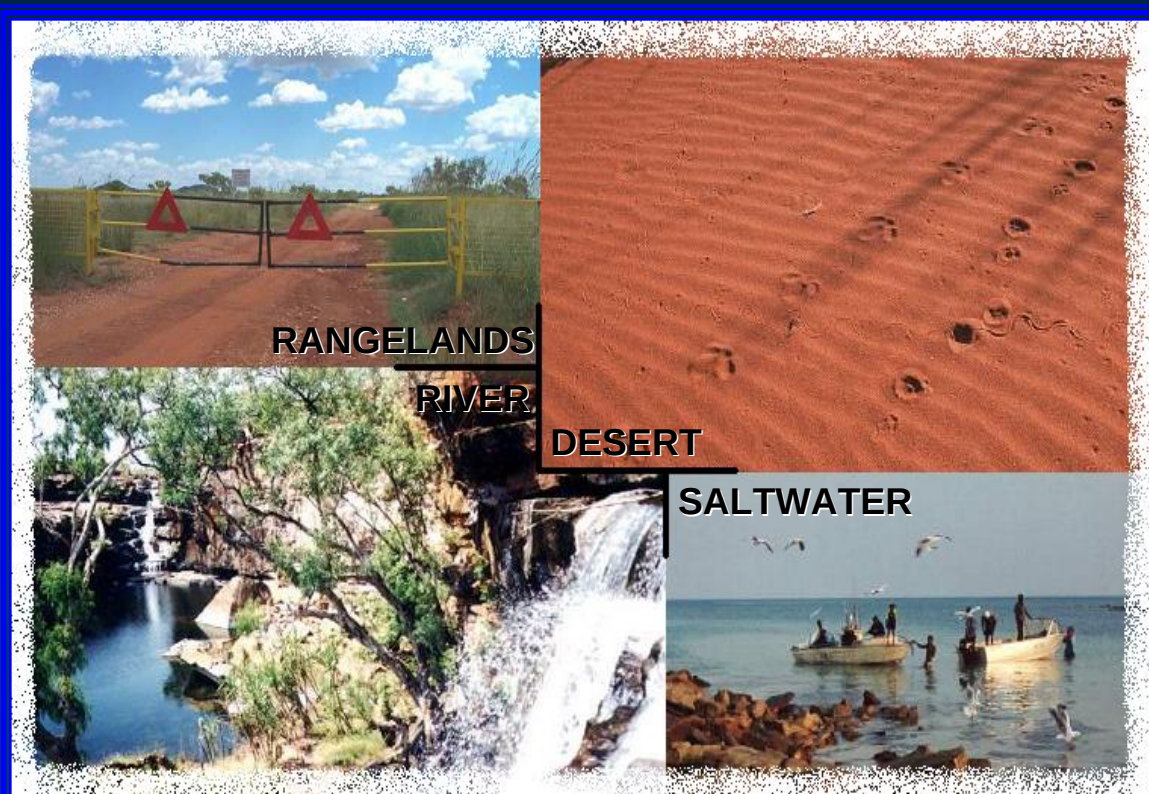
- BACKGROUND TO THE NAILSMA TURTLE AND DUGONG PROJECT
- BARDI JAWI COUNTRY, ECONOMY, AND CULTURE
- THE SURVEY OF BARDI JAWI TURTLE AND DUGONG HARVEST
- FINDINGS FROM THE SURVEY AND ECONOMIC VALUATION OF HARVEST
- THE SURVEY OF BARDI JAWI TURTLE AND DUGONG MANAGEMENT
- THE VALUE OF BARDI JAWI MONITORING AND MANAGEMENT OF TURTLE AND DUGONG
- CHALLENGES
  - OF THE HARVEST SURVEY RESEARCH
  - OF COMMUNITY-BASED MANAGEMENT OF TURTLE AND DUGONG
- BARDI JAWI ASPIRATIONS FOR ONGOING COMMUNITY-BASED RESEARCH AND MANAGEMENT

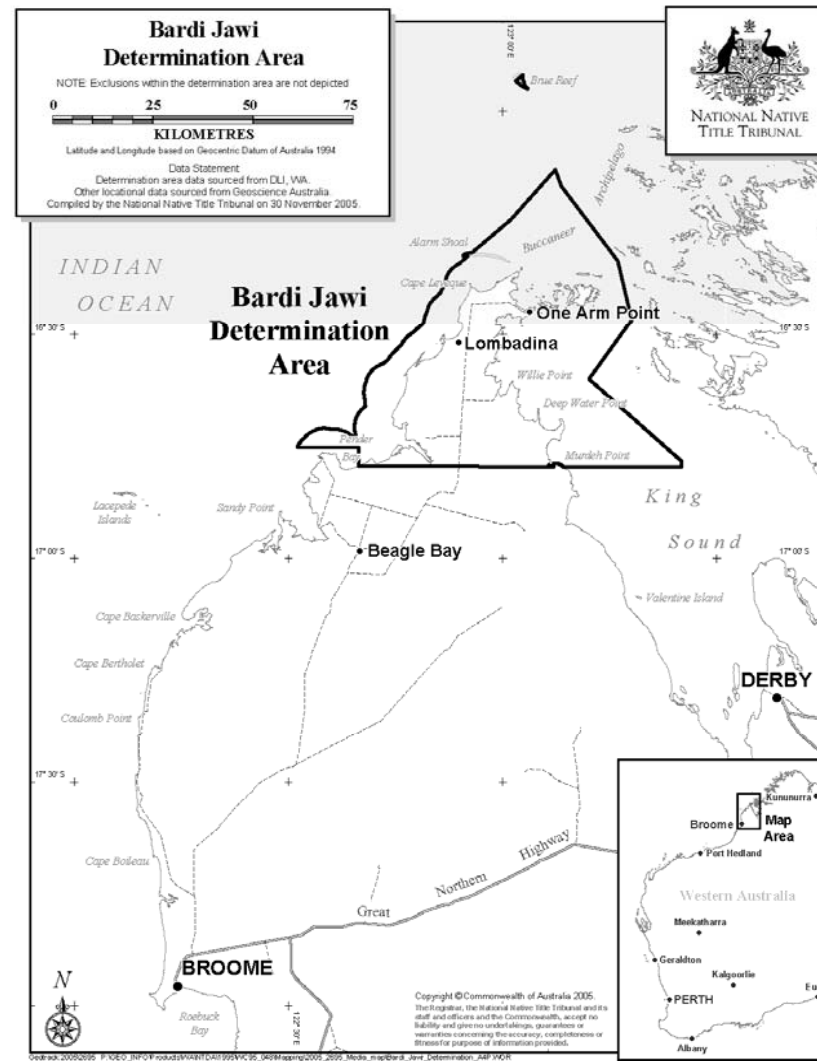


# **NAILSMA Dugong and Marine Turtle Project**

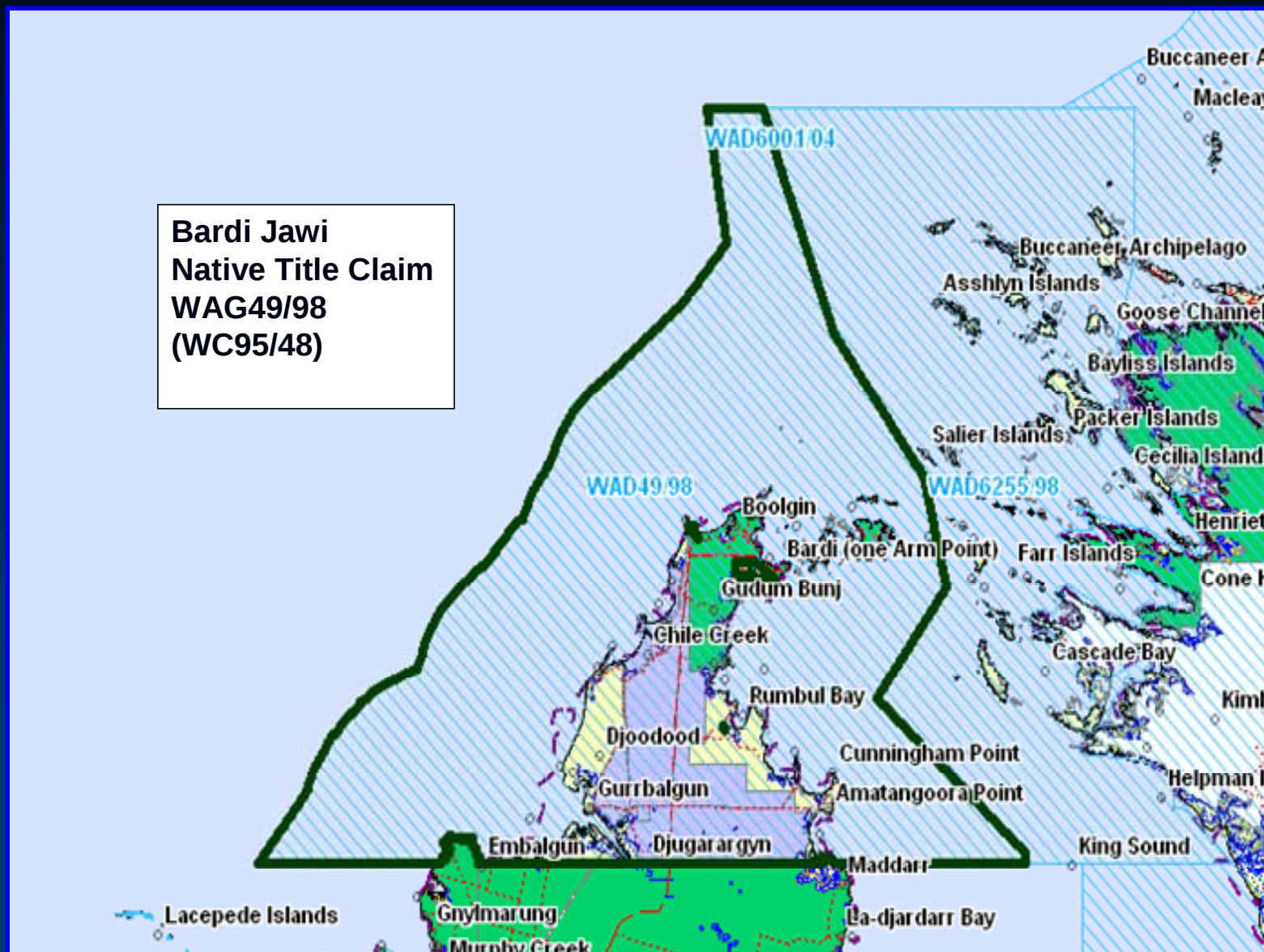
## **Kimberley Land Council**

### **Land and Sea Management Unit**





**Bardi Jawi  
 Native Title Claim  
 WAG49/98  
 (WC95/48)**





# IMPEDIMENTS TO ECONOMIC DEVELOPMENT



## BARDI AND JAWI COMMUNITIES SOCIOECONOMIC PROFILE

The 2006 Census tells us that the Bardi Jawi communities of Djarindjin, Lombadina and One Arm Point have:

- An Indigenous population of 588 (90% of the population)
- A young population (average age of 20 compared to 37 for WA)
- Low levels of formal education
- A very high rate of CDEP employment (84% of those employed)
- A high rate of employment in lower paid jobs
- Low average income for individuals (\$250 per week) and households (\$692 per week)
- A high number of occupants per dwelling (6.8 on average)

# BEYOND THE CENSUS STATISTICS



The 2006 Census and other statistics do not tell us about:

- Poorest people paying the highest costs of living
- Contributions made by people hunting and fishing
- Other benefits that come from being on one's own country and from caring for country

# BARDI JAWI: LEARNING AND LIVING ON COUNTRY





# SOCIAL AND CULTURAL KNOWLEDGE AND VALUE OF TURTLE AND DUGONG

Bardi Jawi cultural knowledge collected from senior traditional owners and the literature told us that:

- Hunting and management of dugong and marine turtles is a fundamental part of Bardi and Jawi economy, culture and society. It is part of Bardi and Jawi Law. Odorr and goorlil have been an integral part of life for Bardi and Jawi since Creation.
- Bardi and Jawi society has experienced much change. This change has seen the transformation of hunting and sharing practices. Some Bardi and Jawi people see these practices as having broken down.



# SURVEY OF BARDI & JAWI HARVEST AND MANAGEMENT OF DUGONG AND MARINE TURTLES

- October 2006 to January 2007: Pilot survey of hunters and revision of survey sheets by Bardi Jawi Rangers
- February 2007 to January 2008: Hunting survey undertaken
- Data recorded on sheets and entered on computers by Bardi Jawi Rangers
- Data sent by email to CAEPR in Canberra to be checked and analysed
- Visits by CAEPR Researchers in February and November 2007
- Literature review and socioeconomic profile by CAEPR researchers
- April 2008: Draft report sent to NAILSMA, KLC, Bardi Jawi and peer reviewers
- June 2008: Draft findings presentation to Bardi Jawi Steering Committee
- September 2008: Final report



# HUNTER SURVEY SHEET

Date \_\_\_\_\_

Data Sheet Completed by \_\_\_\_\_

| NAME OF HUNTER | TOTAL NO. OF TRIPS (Successful and <u>NOT</u> successful trips) | APPROX DATE OF EACH TRIP (in last week, 1 month ago etc) | LOCATION OF EACH TRIP | NUMBER CAUGHT |      |      | REASON FOR TRIP? (Fishing trip or <u>SPECIALLY</u> for dugong or turtle, other reason) | TIME SPENT (Average hours taken for each trip) | NO OF PEOPLE INVOLVED (Average No of people per trip) | DISTRIBUTION AND USE OF CATCH<br>1. Is it being shared with other people?<br>2. Who is it being shared with?<br>3. Where do they live?<br>4. Is it being used for special event? (eg funeral) | TURTLE, NESTS AND DUGONG OBSERVED (on hunting trips) |
|----------------|-----------------------------------------------------------------|----------------------------------------------------------|-----------------------|---------------|------|------|----------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
|                |                                                                 |                                                          |                       | Dug           | Turt | Eggs |                                                                                        |                                                |                                                       |                                                                                                                                                                                               |                                                      |
| XXX            | 1                                                               | 14/04/07                                                 | OAP                   |               | 1    |      | Food                                                                                   | 4hrs                                           | 3                                                     | Food                                                                                                                                                                                          | 1dugong 12 turtles                                   |
| XXX            | 1                                                               | 15/04/07                                                 | OAP                   |               | 1    |      | Food                                                                                   | 4hrs                                           | 3                                                     | Food                                                                                                                                                                                          | 3 turtles                                            |

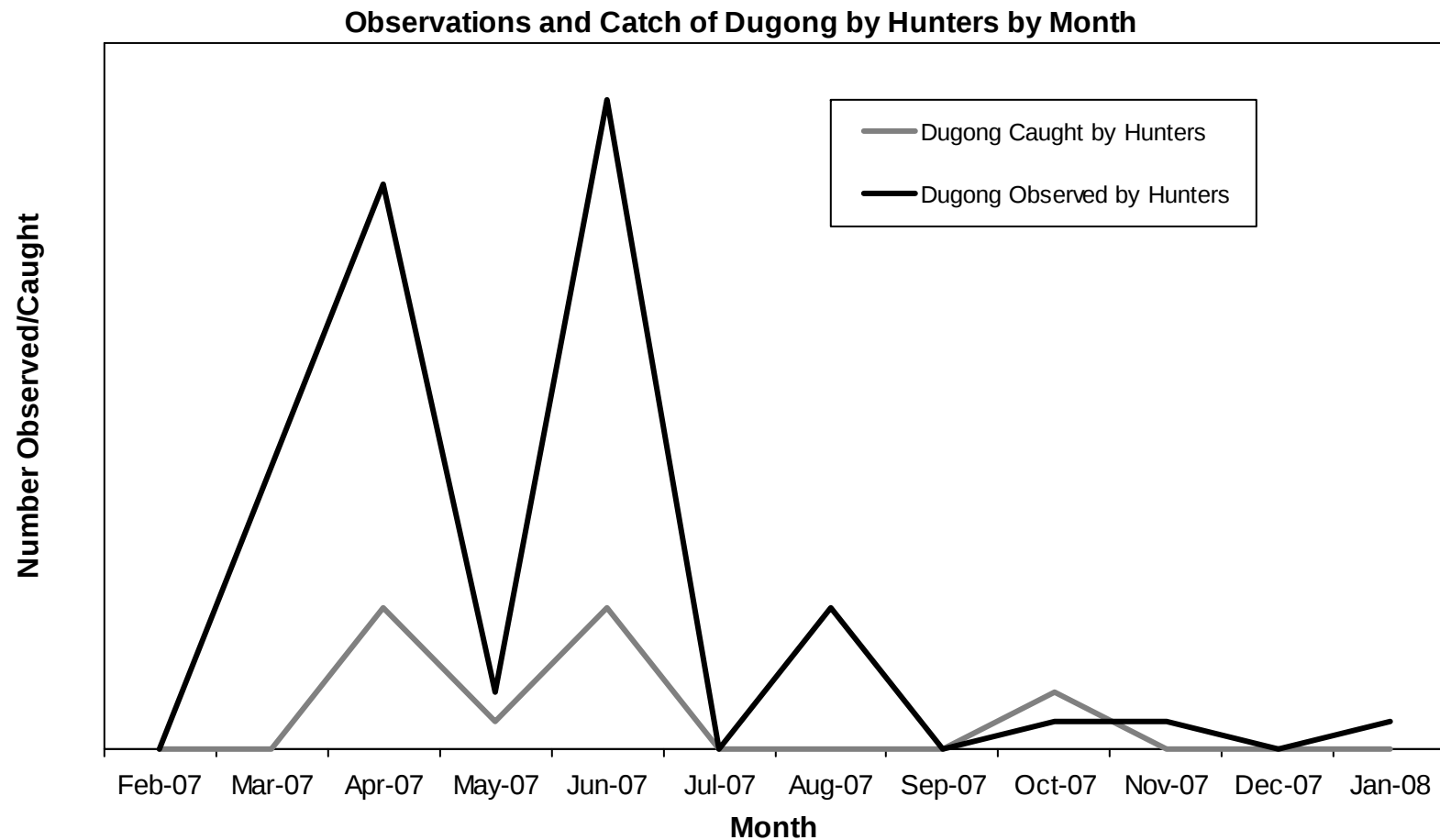
# DATA SHARING AGREEMENT

**Bardi and Jawi traditional owners wanted to make sure that the research would be carried out co-operatively and that it would be community controlled and driven. Bardi and Jawi have had a long history of involvement in research but too often information has not been retained by or returned to the communities.**

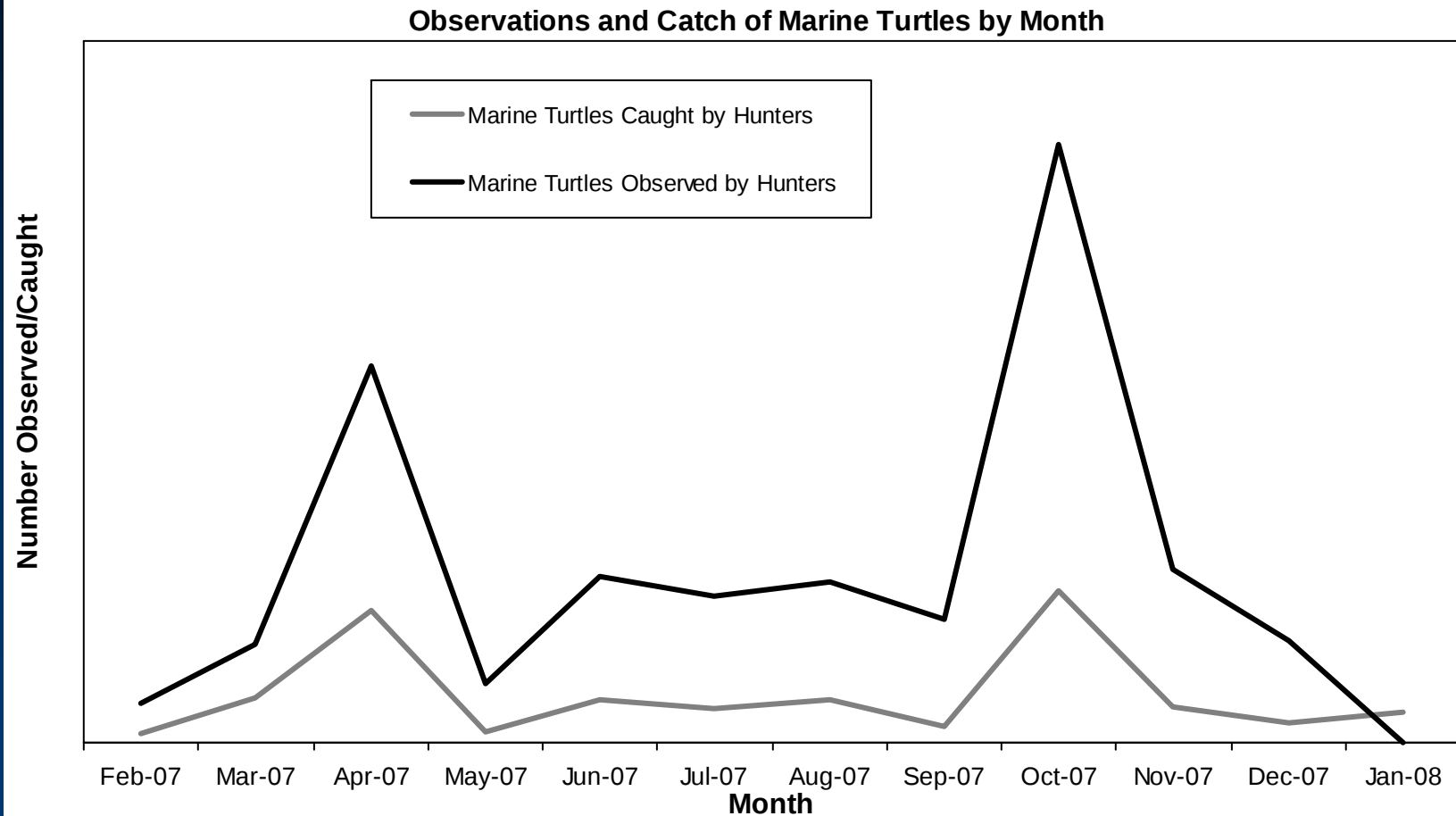
**Key features of the data sharing agreement for the socioeconomic study:**

- **Between the Bardi Jawi Turtle and Dugong Steering Committee, NAILSMA and CAEPR**
- **Ensure privacy of hunters and other community members who participated in the study**
- **Hunting locations not to be reported without Steering Committee consent**
- **Harvest numbers not to be made publicly available without Steering Committee consent**
- **Draft report to be made available for comments by the Steering Committee**

## DUGONG: OBSERVED AND CAUGHT BY HUNTERS



# MARINE TURTLES: OBSERVED AND CAUGHT BY HUNTERS



# ECONOMIC VALUATION OF THE DUGONG AND MARINE TURTLE HARVEST

What would be the cost of buying the same amount and quality of meat from a community store?

Based on: edible meat weights, nutritional value, local delicacy status, organic and fresh food source.

- Sirloin steak/Boneless chicken Breast = \$20 per kg
- Porterhouse steak = \$40 per kg
- Dugong/marine turtle ~ \$30 per kg



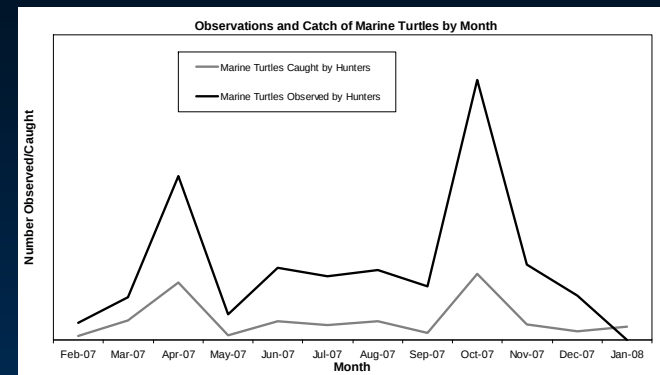
## KEY FINDINGS FROM THE SURVEY OF HUNTERS

- Surveyed 55 Bardi Jawi hunters over 12 months (20% of the male population)
- Five of the surveyed hunters (and their crews) were responsible for almost half of the recorded catch
- The 12 month harvest provided an estimated 11,840 kg of edible meat
- Over 85% of this meat was from marine turtles
- We estimated that it would have cost \$355,200 to replace this meat with the nearest alternatives from a local store – approximately \$79.43 worth of meat per household per week.
- Estimated fuel cost of hunting trips = \$13,492

# SOCIAL AND CULTURAL VALUE OF DUGONG AND MARINE TURTLES: SURVEY FINDINGS

The hunter survey told us that:

- Hunting largely followed the customary seasonal cycle
- Hunters always reported having shared their catch, mostly with family
- Dugong and marine turtles were sometimes caught for special occasions
- Dugong and marine turtles were sometimes shared with family living on other blocks or in other towns such as Beagle Bay, Broome or Derby
- Hunters play a key role in monitoring turtle and dugong



# SURVEY OF BARDI JAWI MANAGEMENT OF TURTLE AND DUGONG

Fortnightly Period \_\_\_\_ 5/2/07 \_\_\_\_ to \_\_\_\_ 18/2/07 \_\_\_\_

Data Sheet Completed by \_\_\_\_ XXX \_\_\_\_

## Management Activities for Dugong and Marine Turtle Undertaken (in last 2 weeks)

| <i>Management Activity<br/>(Type of activity, location etc)</i> | <i>No of People<br/>Involved<br/>(No of people<br/>involved in<br/>each activity)</i> | <i>Time<br/>(Total people<br/>hours spent on<br/>each activity)</i> | <i>Employment<br/>(How were activities<br/>funded, No of people on<br/>CDEP, volunteer, paid<br/>etc)</i> | <i>Other Resources<br/>Used<br/>(vehicle, boat, fuel<br/>etc)</i>                  |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| LSMU Meeting Derby                                              | 1                                                                                     | 48                                                                  | 1 – P.O.                                                                                                  | Vehicle, fuel                                                                      |
| Turtle Beach Monitoring- RAP                                    | 6                                                                                     | 72                                                                  | 6 – CDEP Ranger Top up                                                                                    | Vehicle, fuel                                                                      |
| Lacepedes Flight turtle monitoring                              | 5                                                                                     | 15                                                                  | 4 – CDEP Top up<br>1 – KLC P.O.                                                                           | Vehicle, fuel,<br>Charter plane hire                                               |
| Restricted Coxwains Course                                      | 6                                                                                     | 108                                                                 | 6 – CDEP Top up                                                                                           | Vehicle, Fuel,<br>TAFE Lecturer,<br>Boat lent for use<br>from Cygnet Bay<br>Pearls |
| Seagrass Monitoring                                             | 5                                                                                     | 20                                                                  | 4- CDEP Ranger Top up<br>1 – KLC P.O.                                                                     | Vehicle, fuel                                                                      |

# DUGONG SATELLITE TAGGING



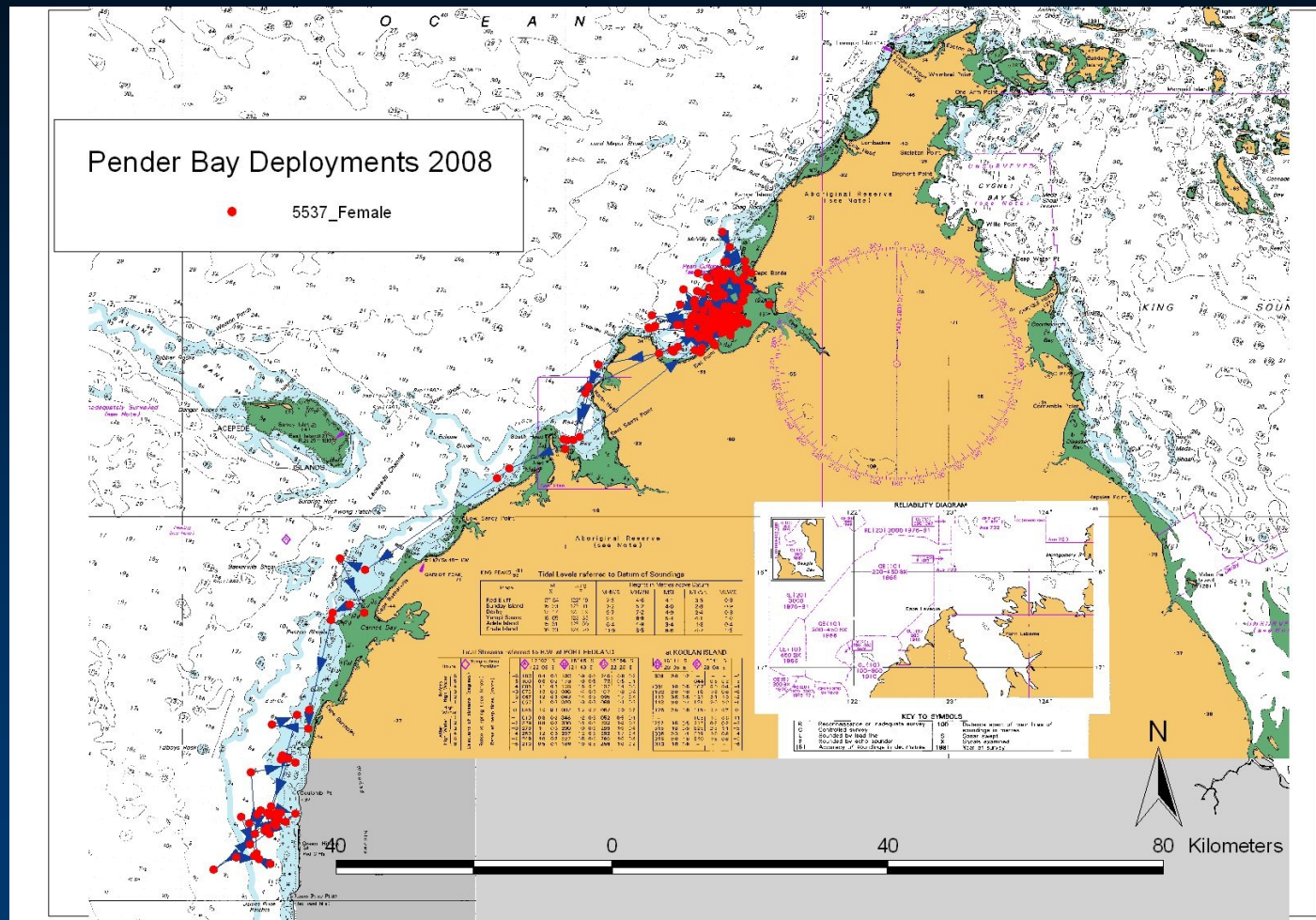


# DUGONG SATELLITE TAGGING



# DUGONG SATELLITE TAGGING





## OTHER DEVELOPMENT IMPACTS ON COUNTRY: TOURISTS WITH NO IDEA ??? 4WDS AND BOATS



# THE VALUE OF MONITORING AND MANAGEMENT OF DUGONG AND MARINE TURTLES

Monitoring and management dugong and marine turtles can provide benefits in terms of:

- Jobs, training and 'real wages' for Rangers and support staff
- Raising hunter and community awareness
- Increased individual and community esteem
- Regaining a level of community control over sea country
- Keeping culture strong - maintaining Bardi and Jawi Law and culture
- Providing information essential to ensuring harvest is sustainable and that other impacts are managed effectively
- Managing other impacts on dugong and marine turtles and sea country
- Building valuable networks and relationships



## CHALLENGES OF THE HARVEST SURVEY RESEARCH

- Community trust and relationship building over time
- Incentives for hunters to participate in the survey
- Difficulties in contacting survey participants
- Fitting surveys into ranger work program and patterns of community life
- Community people learning research and monitoring methodology (e.g. ensuring consistency in data collection)
- Data entry, analysis and use of databases
- Return of information to Bardi Jawi in a useful and meaningful way
- Integrating economic, social, cultural and biophysical knowledge in research

## CHALLENGES OF COMMUNITY-BASED MANAGEMENT

- Resources (office space, boats, vehicles) – heavy reliance on private and community resources
- Remoteness and covering the terrain by 4WD and boat
- Skills and training
- Community trust and relationship building
- Matching community, researcher, and agency aspirations
- Lack of formal recognition of rights and responsibilities over sea country
- Governance of land and sea management and resource use



# FUTURE COMMUNITY-BASED DUGONG AND MARINE TURTLE RESEARCH

- Cooperative, community controlled and community driven – research and management
- Socioeconomic study as a basis for ongoing, community-based monitoring of harvest with possible annual reporting
- Monitoring for sustainability – maintaining and building further research relationships
- Improving data collection – CyberTracker, turtle egg harvest
- Developing and maintaining a local dugong and marine turtle database
- Sharing information and experiences with other communities – cross-regional management
- Getting adequate recognition, rights and resources to manage sea country effectively and efficiently



# ACKNOWLEDGMENTS

- North Australian Indigenous Land and Sea Management Alliance: Dr Rod Kennett, Project Coordinator
- KLC Land and Sea Management Unit: Richard Meister and Jane Blackwood
- Bardi Jawi Rangers: Nathan Sampi, Kamis Bin Swani, Sean Manado, Eddie James, Alec Isaac, Trevor Sampi, and Terry McCarthy
- CAEPR Project Team: including Libby Larsen and Bill Arthur
- Visiting Indigenous Fellowship Scheme

