LARS BEJDER - RESEARCH UPDATE TO CALM - MARCH 8, 2002

1. Land-based theodolite observations:

	2000 season	2001 season	Total
Hours of tracking effort	182	335	**517**
Hours of focal tracking	127	182	**309**
No. of tracks of > 1 hour duration	38	68	**106**
No. of interactions btw. boats and dolphins	82	110	**192**

Theodolite data includes:

- Speeds, movement patterns, orientations, distances
- Group behaviour and group cohesion
- Group splits and joins
- Vessel scans
- Controlled approaches:
  - Controlled vessel approaches at two sites (impact and control site). Impact site is Red Cliff Bay (45 controlled approaches tracked). Control site is approximately 10-15 km up the coast towards Guichenault Point (controlled approaches will be carried out this season 2002).

2. Sirenia/Tinny Tinny observations:

Independent research vessel observations (60 hrs of individual focal follows of 6 individuals, i.e 10 hrs each, of animals that frequently have interactions with tourism vessels – need 4 more individuals). I need to compare with 10 individuals that do not have frequent contact with tourism (will be collected in 2002 field season).

3. Acoustic observations:

Acoustic recordings of dolphin vocalisations in reaction to boat approaches. Preliminary recordings and observations carried out in 2001 season. Major field work will be carried out in July/August/September 2002 in collaboration with VIncent Janik. We need acoustic recordings of approximately 30 "before/during/after" trials.

4. Commercial vessel observations 2001 season):

349 dolphin/vessel interactions, 170 dugong/vessel interactions

Collected data:

- Individual identification of animals
- Location of interaction, Duration of interaction
- 1 minute point samples of individual dolphin behaviours
- CV motor activity at 1 min samples, All occurrences of CV motor activity changes
- CV location effort (GIS files)

5. Other existing data:

Long-term database from Dolphin Research Group from 1984. Sighting records of individual animals during various phases of tourism: no CVs, 1 CV, 2 CV.

Existing data will be used to look at long term movement and habitat use in reaction to tourism and Pearling industry over a 15 year period. Data are available for individual IDs and location before tourism (min. 5 years prior), during 1 commercial operator (4 years) and 2 commercial operators (3 years). Approximately 15.000 surveys.

CONCURRENT PROJECTS

6. Night-time behavior and acoustics of bottlenose dolphins in Shark Bay.

Compare day time focal follows of individual animals to night time focal follows of same individuals
Currently have 60 hours of individual focal follows during daytime (6 individuals, 10 hrs each)
Need 60 hours of night time focal follows of the same individuals

Compare day time and night time acoustic surveys:
Day time acoustic surveys of dolphin *groups* (n=38) – *need 2 more*
Night-time acoustic surveys of dolphin *groups* (n=10) – *need ca. 30 more*

7. Function and mechanics of sponge-usage by bottlenose dolphins in Shark Bay.

I will be spending 6-8 weeks during my 2002 field season trying to obtain underwater video recordings of dolphins carrying and using sponges. Despite the work of Smolker *et al.*, (1997) we still don't really know how and why dolphins use sponges.

Three hypotheses for sponge usage:

1. dolphins preying with sponge (most likely scenario)
2. sponge contains some kind of compound of use for the dolphin (medical remedy?)
3. dolphins "playing" with sponge

I hope to acquire enough recordings to shed light on:

How exactly do the dolphins use the sponges?
What are they preying on?
How do they tear off the sponge at the bottom?

Recording attempts will be carried out using a "pole-cam". A ca. 4-6-m pole will be bracketed on the side of the boat to allow recordings to be made at varying depths. There will be an on-board monitor to allow for real time observations and recording.

Polcam equipment will be supplied by the BBC natural history unit. In return, BBC reserves the rights to all footage for documentary use.