The Royal Society of Western Australia

Ensuring a sustainable whale-watch industry
Western Australia leading the way

Dr Lars Bejder
Murdoch University Cetacean Research Unit

7 pm Monday 19th May 2008
Kings Park Administration Building
off Fraser Ave, Kings Park

Wading into knee-deep water to encounter wild dolphins and viewing the migration of whales first hand are now every day tourism activities courtesy of whale and dolphin watching tours. But are these interactions harming the marine mammals that people love to watch? Can dolphins and whales co-exist with tourism?

Dr Lars Bejder, Murdoch Research Leadership Fellow, will present information on research into the impacts of tourism on cetaceans. To date, his research into impacts of dolphin-watch tourism at Shark Bay has triggered a major shift towards sustainable management of such tourism encounters, and as a result of his work, and the State Government’s leadership in whale and dolphin tourism management, the IWC Whale-watch Scientific Committee has embarked on a large-scale whale-watching research plan to establish a world-best practice for marine-based tourism.

Members, guests and visitors welcome

http://www.ecu.edu.au/pa/rswa

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**BEACH EXCURSION TO MULLALOO**

Thirty people attended the Royal Society of Western Australia beach excursion to Mullaloo on Sunday 27th April 2008. The objective of the excursion was to explain the beach environment from large scale landforms to the sand sized components, and then apply the information to interpret the nearby cliffs cut into Pleistocene limestone. The excursion commenced with an explanation of wind, waves, and wave orbitals and how they impinge on the shore to develop the various sedimentary environments on beaches.

The group ventured to the shore to examine the various processes such as sand transport and sorting that were operating in the shallow water and swash zone to develop laminated sand. With spade work, the inter-layering of fine, medium and coarse sand on the beach was observed in pits, and the bivalve *Donax* was collected from the swash zone.

The various products of waves, tides, and wind interacting with levels of the beach were examined in turn up the beach slope: the laminated sand, the bubble sand, the flotsam-and-jetsam zone (with weed, disrupted layering, ghost crabs, cuttlefish skeletons, and ramshorn shells), the ramp of fine sand formed by wind action, and the vegetated foredune.

The stratigraphic sequence that develops when the coast progrades was then explained. The site of the excursion was the northern shore of the Whitfords Cuspate Foreland, where there has been coastal accretion over the past several thousand years, and the sequence of trough-bedded sand, laminated sand, bubble sand, disrupted sand (with *Sepia* and *Spirula spirula*) and dune sand is well developed.
Looking at the layering on the ramp of wind deposited sand above the storm water level

The focus then turned to coastal vegetation. The vegetation succession, in response to accreting foredunes, and distance from salt effects was explained by Cate Tauss, the botanist on the excursion. There was a differential response and role of the various species of coastal vegetation in the trapping and binding of the sand, progressing from the foredunes, vegetated by *Spinifex hirsutus*, *Spinifex longifolius* and the naturalised alien seawheat (*Thinopyrum distichum*), to further upslope with *Tetragonia decumbens*, *Cakile maritima*, *Leucophyta brownii* and *Scaevola crassifolia*, to finally inland areas of heath of *Myoporum insulare* and *Acacia rostellifera*.

Cate Tauss explaining the role of *Spinifex* roots on trapping and binding sand in the foredunes

The excursion returned to the car-park to examine the sand with microscopes and hand lenses to identify the sand types (quartz, mollusc fragments, calcareous algae, foraminifera, sponge spicules, and lithoclasts.

Vic Semeniuk pointing out a ghost crab burrow in the limestone

Once armed with information on processes and products of the modern beach and dunes, the excursion moved to the nearby limestone cliffs to attempt to identify the same set of sedimentary structures, bubble sand, burrows, and fossils, and attempt to interpret the origin of the limestone in terms of its sedimentary environment. Critical to identifying the former depositional environments in the Pleistocene limestone were trough-bedded sand, laminated sand, “bubble sand” structures, ghost crab burrows, disrupted structures in sand, and layers of *Sepia* and *Spirula spirula*.

The excursion attendees were able to find and identify all the target sedimentary structures and fossils in the limestone, and able to interpret the origin of the former environment.
RSWA Events Calendar 2008

This space will be updated each month in order to provide RSWA members and guests with a calendar of up-coming events which will include ordinary monthly meeting, and special events such as Public Forums, Symposia, and excursions. *Watch this space!*

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