

## **Marine Interpretive Centre in Adelaide.**

Major Developments Panel (September 1999) Dear Administrator and Panel,

**Re: ISSUES PAPER, Holdfast Shores-Stage 2**

### **2.2.3 ENTERTAINMENT PRECINCT: Investigator/educational/science centre**

#### **1. Proposal**

The site designated "ENTERTAINMENT PRECINCT" is, as never before in the history of South Australia, the most appropriate place by the sea for a high profile "Marine Interpretive Centre" hereinafter called the "Centre". This would be a place to expand public interest in, knowledge of and concern for the marine life of our southern temperate waters and the freshwater catchments including the Torrens, Sturt and Urray/Darling Rivers. A place to inform, educate, entertain and provide sustainable returns for investors.

For most South Australians, Glenelg is the link between land, sea and settlement in this State. A Marine Interpretive Centre adjacent to the Glenelg Town Hall can only enhance the commercial tenancy of Rod Fox's "Shark Museum" and the themes of "Tjilbruke Aboriginal Legend" and "seaside" at the Glenelg Town Hall redevelopment.

#### **2. To Be Proudly South Australian**

Few places in the world have the levels of uniqueness associated with their land and sea based flora and fauna as South Australia. Here we have over 85% of marine species that are found nowhere else on the planet and this more than favourably compares with the Great Barrier Reef which can only boast 15% endemism of its resident flora and fauna.

The Leafy Seadragon is only found along the southern coastline of Australia. It is the subject of intense research including the efforts of community organizations coordinated by Dragonsearch and Reefwatch. As the unofficial state fish in South Australia and a flagship species it represents the biological diversity caused by South Australia's geographical isolation from the rest of the world. The Centre would base its programs and exhibits on the theme of the local marine habitats and communities.

#### **3. The Role of a Marine Interpretive Centre**

A state-of-the-art showcase to:

- Be a place for people of all ages, backgrounds and educational levels
- Engage all visitors to enhance their appreciation of the dynamic elements of South Australia's unique natural environment from crashing waves on the rocky shore to beachcombers on a sandy shore
- Connect the human activity in the river catchments to the marine and coastal environments
- Convey meaningful information that can influence attitudes and perceptions of water in the driest state of the driest continent on planet Earth
- Promote the responsible management of the South Australian coastline and the world's ocean environment through innovative exhibits and public education programs
- Influence legislation on conservation and education
- Teach by contact and example
- Become a powerful education centre and in so doing enhance education through proactive involvement with schools throughout South Australia
- Facilitate research by linking with scientific and community based groups like Dragonsearch and provide the public with a sense of contemporary marine and oceanographic research
- Offer enriching experiences through human interaction with living creatures, art, music, drama and other creative ideas
- Entertain
- Form a major link nationally and internationally with similar institutions and organizations
- Promote the regional tourism associated with marine and coastal destinations and cultural events
- Provide sustainable financial returns to investors

#### **4. The Unique South**

Glenelg is a historically significant place in the longest stretch of south facing coastline in the Southern Hemisphere. It is comparable to Cape Town (South Africa) in its position to feature the unique mix of flora and fauna that exists at the convergence of major oceans. The Interim Marine and Coastal Regionalisation for Australia (IMCRA) identifies eight regions in South Australia with biological and physical features distinct from those elsewhere in Australia.

This includes 4 zones associated with north-south reverse estuaries which are of global significance. With remnant tropical species the Gulf Saint Vincent and Spencer Gulf are warmer and more salty at their source than where they meet the Southern Ocean. This has created unexpected biological associations which were unknown until recent times.

## **5. A South African Connection**

Redevelopment at Cape Town's Victoria and Alfred Waterfront became the catalyst for the Two Oceans Aquarium. The Victoria and Alfred Waterfront Company recognised the role of a marine interpretive centre to sustain visitation to their Waterfront redevelopment and in 1989 allocated a prime site of 5000 square metres in a setting comparable to the Glenelg foreshore and shopping precinct. Construction started in April 1994 and 'Two Oceans' opened in December 1995. It was costed at R35 million and is operated as a Trust between the Transnet Pension Fund (68%) and Norwich Life (32%). With personal observations of many world class public aquariums, it is the sustainable tourism and educational focus at the Two Oceans Aquarium that seeded ambition for this submission.

## **6. The Water of Life**

In Cape Town, water is presented to the public as the most common element to all life. The connection and interdependence of every natural and human impact on the water cycle is clearly exhibited and reinforced with culturally inclusive displays, interactive exhibits, hands on activities, volunteer explainers, educational services and outreach programs.

To emulate the initiatives in Cape Town, a Centre at Glenelg would feature real plants, birds, fish and other fauna pertaining to the headwaters, rivers, billabongs and estuary of the Murray/Darling/Coorong ecosystem as a fully connected and integrated theme. Elements of world best practice, which are significantly different to the ill-fated Marineland at West Beach, can be observed in Australia at UnderWater World (Mooloolaba, Sunshine Coast), the Sydney Aquarium, Marine Discovery Centre (Queenscliff, Victoria) and at the Northern Territory's Fauna Park.

## **7. Public Interest and Support**

The Marine Discovery Centre at Queenscliff in Victoria has operated on the same site as the Victorian equivalent of SARDI Aquatic Sciences Research Centre (West Beach) and is expected to continue its outstanding contribution to marine education in Victoria when the Melbourne Aquarium opens adjacent to the Crown Casino in 2000.

In 1999 the Open Day at SARDI attracted a crowd of 12500 adults where the public waited in queues for up to an hour to view temporary live and frozen exhibits taken from our local waters. It is understood that SARDI is considering daily tours of its facilities on a cost recovery basis in response to keen interest from the public and visitors to the 'Wool Shed' on the old Marineland site.

## **8. Marine Life Experiences in Schools**

Neither the Marine Discovery Centre (Star of the Sea School) at Henley Beach nor the specialist marine studies facilities at Hallett Cove School can cope with the level of interest from public and private school groups for marine interpretive experiences. The Hallett Cove School facilities are used as a teaching resource for 100% of the school day and special interest groups are limited to access outside of normal school hours. The Henley Beach program is fully booked for 1999 and it has already taken 45 bookings for 2000.

## **9. A South Australian Flagship in the USA**

It is significant that half a world away, the Seattle Aquarium is celebrating the new millennium with opening an Australian exhibit featuring live Leafy Seadragons, the flagship for marine biodiversity in South Australia and the only bony fish that is 'totally protected' here. These Leafy Seadragons were sourced as eggs in SA from a brooding male, raised in Victoria, exhibited in Dallas and soon to be on loan to Seattle Aquarium

where few South Australians will have the opportunity to see 'protected and threatened' marine heritage that is so uniquely South Australian.

## **10. The Spirit of South Australia**

As a flagship species and a potential logo for the Centre at Glenelg, Seadragons would require the type of special treatment afforded to the Coelacanth (a living fossil deemed to be extinct). Two Oceans Aquarium solved the impossible task of exhibiting the deep water Coelacanth with the use of a preserved museum specimen, photographs, life sized models, habitat simulation and multi screen video loops from robotic deepwater cameras.

Growing Seadragons in the captive environment remains contingent on brooding males from wild stock and a constant supply of living mysids (small crustaceans) in circumstances that have yet to meet aquaculture quality assurances. A Seadragon exhibit could be the catalyst for an unprecedented spirit of collaboration with a potential to involve:

- The City of Holdfast Bay
- The proponents of Holdfast Shores-Stage 2
- Relevant State Ministers (DETE, Aboriginal Affairs, Arts, Environment and Heritage, Tourism, Local Government, Transport & Urban Planning, Primary Industries, Natural Resources & Regional Development etc)
- Federal funding bodies (Tourism and Natural Heritage)
- Catchment Management Boards
- SA Water
- Coastcare/Landcare
- SARDI Aquatic Sciences Research Centre, West Beach
- National and International Syngnathid (Seadragons, seahorses and allies) aquaculture, research and development
- The Marine and Coastal Community Network/Dragonsearch/Reefwatch
- The Marine Life Society of South Australia
- The Marine Education Society of Australasia
- Marine Discovery Centre(s)
- The Conservation Council of SA
- Commercial and recreational fishers
- Aquarists, divers, volunteers, friends groups and other stakeholders/sponsors

## **11. The Holdfast Shores - Stage 2 Development Site**

A Marine Interpretive Centre could occupy the space proposed as the 'Investigator /educational/science centre' in the Entertainment Precinct of Holdfast Shores - Stage 2. It could fit the built form of a traditional railway station concourse and evolve with the development of Holdfast Shores-Stage 2 and Magic Mountain.

The preferred option is to consider a Marine Interpretive Centre of such significance that it merits a design brief for a purpose built structure like the Two Oceans Aquarium.

Supply and disposal of seawater for any 'aquarium' on the site is as essential as plans for the beach, sea wall and service infrastructures. A small scale centre could rely on seawater carried from SARDI at West Beach while the best option is to secure a direct draw at high tides from a pipe concealed in the bay. A decision to do so must be subject to a favourable EIS. The continuous supply of power and emergency backup is important for the survival of live exhibits. Consideration must also be directed to the maintenance of temperature within the tolerance levels of the selected flora and fauna.

## **12. Link with the Old Town Hall Redevelopment**

The link planned between the Town Hall and the Entertainment Precinct could be an "exit" from the Centre through an acrylic tunnel with sharks, rays and blue grouper as an entry point to Rod Fox's shark museum/marine art/souvenir shop. Such structures are featured in the Northern Territory Fauna Park, Townsville's Great Barrier Reef Aquarium, UnderWater World (Mooloolaba), at Manly and Darling Harbour (Sydney) and the new Melbourne Aquarium.

## **13. The Seawater System**

In a best case scenario the Centre would use a semi-closed system in which seawater is pumped directly from the bay (pier) via sand filters. Continuous water flow would replace the entire contents of the system every 10 days. In addition to water changes and mechanical filtration, biological filtration would utilise populations of nitrosomonas bacteria which change toxic ammonia compounds to nitrite, whereafter nitrite is changed to less harmful nitrate by populations of nitrobacter bacteria.

With water sourced from SARDI, the refrigerated, 2000 litre system of this type at Hallett Cove School has sustained a 7 metre long marine life viewing wall with less than a 50% water replacement each year since February 1996. Oils and other waste products which collect on the surface of the water as a result of feeding are removed by skimmers prior to recirculation or treatment for disposal by approved, environment friendly methods.

## **14. Potential Exhibits**

### **14.1 Diversity Hall**

A series of small aquaria and interactive exhibits displaying different groups of animals and related themes. From bait fish to cuttlefish, king crabs to King George Whiting, Murray crayfish to Southern Rock Lobster. From mound springs of the desert to mangroves and seagrass meadows. From the masters of camouflage to the electric ray and other adaptations for survival. From the microscopic to the interesting and bizarre. Each visitor should leave these exhibits with a new appreciation of the great diversity, complexity and abundance of life in SA's water.

### **14.2 Touch Pool and Touch Tables**

Popular exhibits in most aquaria to enable close up inspection and supervised handling of animals like sea stars, sea urchins, sea cucumbers, shells, hermit crabs and beachcomber curiosities. The use of magnifiers, video cameras and explainers to explore the unseen symmetry and forms of marine invertebrates.

### **14.3 Murray/Darling River Catchment**

A major exhibit to connect human activity on the land with its impact on the marine environment.

### **14.4 Kelp Forest**

An exhibit affording visitors close up views of a living kelp forest and the natural associations found in the waters adjacent to Glenelg and/or the South East of South Australia.

### **14.5 Open Ocean**

Perhaps the most dramatic containing large sharks, rays, blue grouper, commercial fish and other species through a visually stunning panel or acrylic tunnel.

## **15. Education Program**

The Centre's education services would tailor a variety of educational and interpretative programs to meet the needs of individual groups from preschool children to adults. Educational outreach programs would travel to schools, libraries, shopping centres, senior citizens and to special functions. Lectures and interpretive programs would be presented for "Friends of the Marine Interpretive Centre" and the general public throughout the year. A large group of volunteer guides/explainers would offer live commentary at the exhibits and lead guided school group tours through the centre.

## **16. Gifts, Book Store and Restaurant**

The existing proposals for the Glenelg Town Hall redevelopment lends itself to a direct link with the Shark Museum where a variety of books, novelties and gift items associated with the marine life of South Australia could be retailed. The restaurant could share a common viewing wall of local marine life with the Shark Museum where patrons could access the Internet and interactive computer terminals relevant to the themes of the Entertainment Precinct and regional tourism in South Australia.

## **17. In Closing**

It would be a positive move at this stage in South Australia's history for the Panel to bring this concept to the attention of the Holdfast Shores-Stage 2 proponents. To encourage such measures as are necessary to recommend the appropriate feasibility studies and levels of assessment for the issues that would have to be addressed ie. Environmental Impact Statement (EIS), Public Environmental Report (PER) or Development Report (DR).

## **18. Key Issues**

- Focus group for interested parties
- Role of three levels of government, commercial and community based stakeholders
- Technical advice
- Floor area dedicated to a Marine Interpretive Centre
- Identification of key roles for the Centre
- Management
- Water supply, treatment and disposal
- Power
- Temperature control
- Name for the Centre
- Logo
- Species list for exhibition
- Access
- Parking
- Other issues.....

## **19. Video Images**

A copy of the video "Windows on the Sea" the making of the Two Oceans Aquarium is supplied to the panel for viewing by all interested parties. A supplement shows students at the marine life viewing wall, Hallett Cove School/construction of the viewing wall/SARDI on Open Day (Seaweek)/Dune succession at the Star of the Sea School (Marine Discovery Centre, Henley Beach)/a brooding Leafy Seadragon at Hallett Cove School and documentary snapshot of a brooding male in the wilds of Kangaroo Island. The tank raised adult Leafy Seadragons from the Hallett Cove School 'hatching' are featured Friday, 10th September, Channel 9, Burke's Backyard, 7.30 pm.

## **20. Network**

The preparation of this submission involved contact, consultations with and/or the naming of many individuals and organisations. A sincere effort will be made to share the text of this submission with the implied network by hard copy or electronic means. Feedback from this network is invited and, with permission, it could be forwarded to the Panel after 5.30pm on 10th September 1999 when written submissions close.

Yours sincerely,  
Tony Isaacson B Sc, Dip Ed (Flinders)

Marine Studies Teacher, founding member of the Marine Aquarium Research Institute of Australia (MARIA, NSW), Inaugural president of MARIA (SA) now the Marine Life Society of SA (MLSSA). Member of Marine Education Society of Australasia (MESA), South Australian Science Teachers Association (SASTA) and Marion Coastal Working Party, SA convenor of the inaugural Science In Schools Week, Seaweek coordinator at Hallett Cove School (1993-). Winner of several environmental awards and the 1997 BHP Science Teachers Award for the development of marine interpretive facilities at Hallett Cove School.