Background
The South African Association for Marine Biological Research (SAAMBR) was formed in 1952 with the aim of contributing towards the wise and sustainable use of the marine resources of the region. Through the operation of a large aquarium and dolphinarium (uShaka Sea World), a marine research institute (Oceanographic Research Institute) and a marine education centre (Sea World Education Centre), this non-government, not-for-profit association is uniquely positioned to lead marine conservation in the Western Indian Ocean. With over 60 years of experience in practical conservation through field research, building awareness of the marine life through the oceanarium and teaching people about marine life through the education centre, the association plays an integral role in helping the people of eastern and southern Africa to care for the marine environment.

Maintaining a world class oceanarium (with a standing volume of over 22 000 m³ of water and 800 000 annual visitors) whilst running an internationally respected research institute and an Education Centre (catering for over 100 000 learners per year) is a complex task. Nevertheless, we knew that we had the potential to make an even greater, and importantly, a measurable, impact on the environmental behaviour of our staff and our visitors. And, although we made every effort to expose our visitors to multiple conservation messages, we’d always just assumed that our staff were knowledgeable about and committed to conservation; this assumption needed to be tested.

In 2008 SAAMBR initiated a conservation and evaluation programme called ‘uSukumani – Making Conservation come alive’. uSukumani is a Zulu word which means ‘Make to stand up’. This name was chosen as it aptly described the programme’s aim – to help the staff to stand up for conservation and to focus on expanding the conservation role of the oceanarium and Education Centre. It was acknowledged that the programme would be long term and iterative – over time as activities were evaluated, data analysed, results discussed and conclusions reached, these outcomes would be incorporated back into workplace practice and the evaluation cycle would begin again.

In order to ensure that conservation and sustainability initiatives were integrated into the culture of the association, we started a Green Team. The Green Team was made up of conservation champions from all SAAMBR divisions, who met...
regularly to discuss ways to make environmentally friendly behaviour easy for staff - both at work and at home. Initiatives ranged from encouraging car-pooling and bringing lunch boxes to work rather than using disposable plastic packets, to competitions between departments to see who could reduce their paper use the most. Larger scale initiatives by the technical department resulted in the installation of equipment which helped to reduce power consumption by 35%, and decreased water use.

In addition to the activities of the Green Team, a conservation training programme was initiated. This took the form of regular presentations. These training sessions ensured that the rationale for the conservation actions were clarified and helped to build enthusiasm and support for the programme.

At the same time as the Green Team were encouraging and supporting staff behaviour change initiatives, the staff of uShaka Sea World and the Education Centre were developing conservation messages for visitors that could be integrated into the daily program, and which would include behaviour change components. Three concepts were identified and integrated into the aquarium interpretation – ‘We are all connected in the Web of Life’, ‘Reduce ReUse Recycle’ and ‘Choose Sustainable Seafood’. The dolphin demonstration was changed to a presentation built around the concept of the ‘Web of Life’, the seal demonstration refocused on ‘Reduce ReUse Recycle’, while the ‘Choose sustainable seafood’ message was integrated into the daily fish feed presentations.

The SAAMBR Staff
This article will focus on one section of the programme – namely the SAAMBR staff. The focus on staff was deliberate; if we were not able to reach our staff with our conservation messages, what chance would we have of reaching our visitors, who generally spend less than three hours in the Park during a visit? After all, it is the staff who interact with our guests – their passion, knowledge and first-hand experience are all critical factors in inspiring visitors. SAAMBR’s focus on the staff aimed to motivate and encourage them to see their work as being more than just a job; to instil in them a sense of purpose. Regardless of position or title, it was important for everyone at SAAMBR to feel that they were contributing to conservation.

Methods
In order to evaluate the impact of the staff component of the programme, a comprehensive survey was designed to assess their environmental knowledge, attitudes and behaviours at the start of the programme (2008) and then again three years later in 2011. A total of 121 staff members from seven different divisions completed the anonymous survey in 2008, and 171 completed the survey in 2011. The survey was repeated in order to ascertain if the intensive conservation interventions described above had been effective in influencing the staff’s conservation knowledge, attitude and behaviour.

SAAMBR has a staff complement of almost 200 people, made up of full-time, part-time and voluntary staff. Ranging in age from 19 to 65, just over half are female and their experience ranges from marine scientists holding PhD degrees to support staff, some of whom only speak isiZulu. While many have over 10 years of experience with the company, SAAMBR moved to a new facility in 2004 and expanded rapidly, employing 80 additional staff members.

Results
A series of lifestyle questions were asked in order to ascertain the socio-economic profile of staff members. Over the three years between the first and the second survey, the age profile of the staff decreased, associated with an influx of younger people, particularly in the Education Department, and the replacement of retiring staff with younger
staff members more representative of the diversity of the South African populace.

The lifestyle questions revealed that the younger staff members were more likely to entertain themselves electronically, through the internet, or television, rather than by spending time in nature, which was more popular amongst the older staff members. Encouragingly, over the course of the study there was an overall increase in environmental interest, reflected in the percentage of staff who regularly discuss environmental issues at home (57% in 2008 to 65% in 2011) and the percentage of staff who had attended a lecture on an environmental issue (14% in 2008 to 18% in 2011). There was no change in the percentage of staff that read articles or watched environmental programmes on television. The internet increased in popularity as a source of information for staff, with 25% stating that they often visited conservation websites in 2008 compared to 33% in 2011.

A series of knowledge-based questions revealed that there was a slight increase in factual knowledge about the oceans and a substantial increase in the awareness of the Sustainable Seafood Programme (2008 = 63%; 2011 = 75%). Surprisingly, the number of staff who could recall an endangered fish name decreased from 82% in 2008 to 76% in 2011. Disappointingly, all staff had slightly increased their consumption of unsustainable seafood over the three years, clearly demonstrating that improved knowledge does not always influence behaviour. In both surveys, 98% of the staff agreed with the statement "Working for SAAMBR increases my awareness of environmental issues."

While there were no dramatic increases in staff interest or knowledge about conservation over the three year period, there were definite increases in environmentally responsible behaviour. Participation in beach or river clean-ups increased from 34% in 2008 to 49% in 2011, while 28% of the staff reported initiating a conservation action at home in 2011, up from 17% in 2008. Membership of an environmental organisation increased from 67% in 2008 to 74% in 2011. The percentage of staff members who regularly recycled plastic (38% to 60%), tins (30% to 39%) and glass (39% to 45%) increased, as did the use of low energy light bulbs (74% to 84%). Use of the sustainable seafood card increased from 53% in 2008 to 73% in 2011 and more staff grew their own vegetables (35% in 2008 to 47% in 2011).

While the statistics provide an indication of some of the changes, the qualitative comments revealed that overall the programme did help staff members to become more concerned about the environment and participate more in environmentally responsible behaviours. Their comments can be clustered into three broad categories:

- **Awareness.** Comments included ‘More conscious of the environment.’ ‘Yes, have learned more about the ocean and what it means to me.’ ‘I have learned a lot and am proud to be inspired by this organisation.’

- **Actions.** Most comments related to their behaviour change and how they were communicating their passion to others. ‘Practice what I preach by reaching out and going beyond.’ ‘Talk about environment and animals to friends and family.’ ‘I am aware and I try to ensure I use every opportunity to make others aware without being “over the top”.’ ‘Try to be a steward for the oceans, helping to change people’s perspectives and making them aware of the plight of the oceans.’ ‘I used to kill animals like frogs with salt, but now I no longer do that.’

- **Attitude changes.** Included ‘Appreciate our marine life a whole lot more.’ ‘Have more respect for the ocean.’

In addition, the staff became better ambassadors for conservation with visitors. They could talk from a sound knowledge base and real experience. Most importantly they all understood their role in conservation and knew that, regardless of their role in the organisation, they were helping to save our oceans.

**Lessons learnt**

Informal discussions with staff revealed that, while the training sessions about the challenges facing our planet, including over-exploitation and climate change, were interesting and built a sound knowledge base, it was the other activities that really promoted the changes in behaviour. The organisational initiatives to save power and water, introduce site-wide recycling and participation in national ‘Green Grading’ initiatives, together with the focus on staff behaviour at work and at home through the Green Team, created a synergistic effect as the staff could see that the organisation was ‘practicing what it preached’ and colleagues were ‘walking the talk’. A few charismatic and enthusiastic champions helped to drive the programme and keep the momentum going. While this was necessary initially, it was not sustainable. SAAMBR is now integrating these initiatives into the strategic planning of the association to ensure that the initiatives implemented between 2008 and 2011 continue to inspire and encourage the conservation behaviour of the staff of SAAMBR.

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