SANCOR'S CURRENCY AND STRENGTH IS INFORMATION

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South African Network for Coastal and Oceanic Research

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SAIAB HELPS TRAIN WITH TRAFFIC *V. Rhouhani*

Twenty-four Eastern Cape Conservation law enforcement officials recently attended a presentation by Vanessa Rouhani, Science Communicator, at the South African Institute for Aquatic Biodiversity (SAIAB). The group, which consisted of staff from the Department of Environmental Affairs and Tourism's MCM Branch, as well as Municipal Authorities from Jeffrey's Bay to Port St Johns, was participating in a week-long Wildlife Trade Law Compliance training course held at the Thomas Baines Nature Reserve near Grahamstown.

The group of Eastern Cape Conservation law enforcement officials

The training course was run by TRAFFIC, the wildlife trade monitoring network, and funded by the Danish International Development Agency. "TRAFFIC works to ensure that trade in wild plants and animals is not a threat to the conservation of nature," said Jonathan Evans, manager of the training project. "Conservation law enforcement officials urgently need training to improve their effectiveness at upholding environmental laws, for the sake of South Africa's wildlife." "We are delighted that SAIAB is assisting us with this training," said Jonathan.

> SAIAB's mission is to be an interactive hub focused on serving the nation through generating, disseminating and applying knowledge to understanding and solving problems on the conservation and wise use of African fishes

The course content included an introduction to wildlife trade, South African environmental legislation, an introduction to CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), species identification and law enforcement skills. SAIAB was able to contribute to the species identification portion of the course. At the Institute in Somerset Street, Grahamstown, participants were guided through an illustrated presentation of commonly traded marine species. They were then shown a range of dried and preserved specimens from the National Fish Collection, before being given posters and literature on South African fish identification.

TRAFFIC is currently training officials responsible for environmental law enforcement in three South African provinces: the Eastern Cape, KwaZulu Natal and Limpopo. A national training programme, managed by the Department of Environmental Affairs and Tourism, is being prepared and will begin soon.

Law enforcement officials being shown some of the prohibited marine species by Vanessa Rouhani at SAIAB.

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INTERNATIONAL WHALE SHARK CONFERENCE *G. Cliff*

I attended this conference, which was held from 9-12 May in Perth, Western Australia. There was excellent international representation with 58 delegates from 23 countries. This was primarily as a result of a large amount of sponsorship obtained from several Australian organizations and government agencies. My conference registration fee and airfare was funded by the organizers.

The conference is the first of its kind dedicated entirely to whale sharks. This species, like the great whales, is regarded as one of the charismatic megafauna", which is one of the reasons why the whale shark has already been protected in a least 11 countries and is the first shark species to be listed under the Convention on International Trade in Endangered Species (CITES) and under the Convention on Migratory Species (CMS). Historically, whale sharks were heavily fished, particularly in Asian waters, and to a lesser extent off the African coast. Today the species is the focus of dedicated ecotourism in at least 18 countries, generating up to $66 million annually.

The conference provided many of us with our first opportunity to meet one another face-to-face, although we have been corresponding by e-mail for several years. There were delegates from other southwest Indian Ocean countries. They included David Rowat from the Marine Conservation Society, Seychelles. David has worked hard over the last few years to foster regional collaboration and information sharing. He has also supervised a detailed tagging and satellite tracking program for whale sharks in the Seychelles, where it is estimated that whale sharks are worth close to US$5 million per annum as an ecotourism resource for a 14 week season.

In Kenya, the whale shark "season" is from November to March and most of the sightings are of males within 500 m of the shore. Whale sharks are still taken by artisanal fishermen, who sell the fins and use the liver oil to waterproof their boats. In recent years there has been an increase in sightings of whale sharks, possibly as a result of huge outbreaks of mantis shrimps.

Australia had the largest contingent of delegates, which is not surprising, given that Ningaloo Reef in the north of Western Australia is the site of what appears to be the largest whale shark viewing industry in the world. Scientists working there have developed a photo-identification system to recognise particular individuals, known as the ECOCEAN Whale Shark Photo-Identification Library. The system is based on the spot and stripe patterns on the left side of the shark immediately anterior to the gill slits and above the pectoral fin. It has been developed by adapting an algorithm originally developed in astronomy for comparison of star patterns in images of the night sky. The developers are encouraging researchers and divers from other parts of the world to submit their images of whale sharks. As whale sharks are known to be wide ranging, it may be possible to match sharks from Australian waters to those sighted in from other regions, including the southwest Indian Ocean.

There were several delegates from Mexico, which also has a large whale shark ecourist industry, both in the Gulf of California and in the Caribbean Sea. Other countries in the Caribbean with such activities are Honduras and Belize, where there the number of tour operators at the Gladden Spit Marine Reserve has grown from one in 1996 to 26 in 2005. Although most shark viewing has an associated Code of Conduct in order to limit possible disturbance of the sharks, there is increasing evidence of a decline in the number and or size of the sharks that are seen at the viewing sites.

India outlawed the fishing for whale sharks in its waters in 2001. Historically large numbers of whale sharks were harvested in Gujarat (591 in 1999 and 2000), off the west coast, although it was conceded that there may well still be the occasional capture by artisanal fishermen, who have long used the oil from the livers to waterproof the wooden hulls of their fishing vessels. It is a little ironical that the fishermen themselves are vegetarian and have never eaten their catch, but appeared to export most of the meat and the fins to Taiwan. Regrettably, it also appears that very few of the whale sharks that were towed into the fishing harbours of Gujarat were ever examined by biologists.

Taiwan appears to have the only remaining legal whale shark fishery in the world. This year's quota is the lowest ever, and has been reduced to 65 sharks. There are also non-targeted/ incidental catches in many parts of the world, the most significant being in Indonesia.

Several presentations described the results of satellite tracking of whale sharks. Although this species is generally associated with warm surface tropical waters, individuals have been shown to dive to depths of at least 1 km, where water temperatures are well below 10° C. As I write there are six whale sharks swimming around with SPLASH tags, that were attached in May at Ningaloo Reef. These tags record location, water temperature and swimming depth at one minute intervals and transmit summary data at six-hourly intervals to satellites. The tags are expected to have an 18-month lifespan. Two of the sharks headed north to the Indonesian coastline and a third has headed northwest into the mid Indian Ocean, while the other three have remained close to the northwest Australian coast. I suspect that the results will confirm the highly nomadic nature of whale sharks.

While satellite tags and other sophisticated research tools are available and have been widely used on whale sharks, there are still enormous gaps in our knowledge. For example the first pregnant whale shark with nearly 300 near-term embryos was only described in 1996. The occurrence of whale sharks close inshore is generally highly seasonal with little idea of where the sharks come from or disappear to. Genetic studies, albeit based on small sample sizes, suggest that there is a single global population.

I presented a paper describing the results of four years of aerial surveys, counting whale sharks between Ballito and the SA/Mozambique border. This project was initiated in 2001 and funded by Marine and Coastal Management to assess the feasibility of establishing a dedicated whale shark viewing industry in KZN. The sighting rates of less than 1 shark per 100 km of coastline clearly would not allow such an activity. None of the delegates at the conference was able to shed any light on the reasons for the paucity of whale sharks. I suspect that some of the sharks have remained in Kenyan waters, feeding on the mantis shrimp swarms. Monitoring will resume in the summer of 2005/6.

The conference will no doubt foster greater international cooperation in understanding and caring for whale sharks across the globe. I am hoping that regional cooperation in the south-west Indian Ocean will help resolve *inter alia* the mystery as to why so few whale sharks have frequented KZN waters in the last four years.

LWANDLE TECHNOLOGIES

Lwandle Technologies is pleased to announce the recent agency sale of a number of items of equipment to the South African marine community. These include Nortek current meters and accessories, a Guildline Autosal salinometer and Biospherical Instruments PAR reference sensors.

Formed in 1996 and located about 10 km south of Oslo, Nortek is an industrial technology company dedicated to the development, manufacturing distribution of water velocity instruments. As part of the Nortek sales, Lwandle supplied a 190kHz Continental current profiler, two 600kHz Acoustic Wave & Current Profilers (AWAC) and an Aquadopp single point current meter with 2000m depth rating.

Lwandle Technologies is a BEE company which provides meteorological and oceanographic products and services to the southern and South African markets. Lwandle represents 13 key international manufacturers whose products range includes CTDS, flotation, waveriders, satellite tracking beacons, acoustic modems, oil spill response equipment, water & sediment samplers and current meters / profilers.

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MARINE RESEARCHER AWARDED THE GOLD MEDAL FOR EXCELLENCE IN MARINE SCIENCE FROM THE ZSSA

The ZSSA'S gold medal was this year presented to Prof John Field (Marine Biology Research Institute, Zoology Department, University of Cape Town) recognizing his long standing and excellent contributions to marine science.

For over four decades, John Field has conducted research into the role that the physics of the ocean - currents, temperature, the presence of the pigment chlorophyll - plays on the marine food chain that begins with microscopic phytoplankton, and ends with large-scale fisheries. In more recent years, he has also been involved in countless studies into the effects of climate change on that food web.

John's work has also earned him spots on some high-level national and international bodies, such as the Consultative Advisory Forum (CAF) that reported to the minister responsible for fisheries management, the SA Scientific Committee for Global Change, the Scientific Committee on Oceanic Research (SCOR), as well as Global Ocean Ecosystem Dynamics (GLOBEC), which investigates the structure and functioning of the global ocean ecosystem and a myriad of others.

The SANCOR Steering Committee and the SANCOR Community would like to congratulate John Field—Well Done !

WESTERN INDIAN OCEAN LAB (WIOLAB) AT CSIR *A.Naidoo*

The marine and coastal environment, and the goods and services it provides, are under threat in many regions of the world. Some of the world's most valuable coastal and marine ecosystems are to be found in the Western Indian Ocean (WIO) region. The WIO States recognized the urgent need for better and more effective management of coastal and marine resources for the purpose of improving the quality of life of its people, sustaining economies of the countries of the region, and maintaining the productivity and diversity of the ecosystems. Based on the decision on the preparation of the Strategic Action Programme (SAP) for the region at the First Meeting of the Contracting Parties to the Nairobi Convention in March 1997, the preparation of the present project was facilitated through a Global Environment Fund Project Development Facility Block-B (GEF PDF-B) grant.

Subsequently, a full-scale project was developed and approved by the Focal Points of the Nairobi Convention at a meeting held in Mauritius in February 2002. The broad goal of this project is to contribute to the environmentally sustainable management and development of countries bordering the WIO by addressing the land-based sources of pollution that have adverse impacts on rivers, estuaries and coastal waters, as well as the associated ecosystems that sustains socio-economic livelihood systems in the region .

The Project focuses on addressing major land-based activities in the region and represents a strong partnership between the WIO countries, the Norwegian Government, UNEP and GEF. The WIO countries that participate in the project include Comoros, Mauritius, Madagascar, Seychelles, Kenya, Tazania, Mozambique and South Africa. The Project is designed to serve as a demonstration project of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), UNEP.

THREE MAJOR OBJECTIVES

- Reduce stress to the ecosystem by improving water and sediment quality
- Strengthen regional legal basis for preventing land-based sources of pollution, including implementation of GPA
- Develop regional capacity and strengthen institution for sustainable, less polluting development including the implementation of the Nairobi Convention

As part of the WIO-LaB Project workplan, the project seeks regional partners. Towards this the CSIR is proposed as a Regional Activity Centre (RAC). The functions of which may include and are not restricted to:

- Cooperation with International Atomic Energy Association, Marine Environmental Studies, Monaco and institutions in the regions to develop a regional monitoring and assessment programme, as well as common methods for sampling and analysis;
- Maintain oversight of the implementation of the programme, through direct contact with institutes in the region, as well as through facilitating and possible hosting three regional planning/ review workshops;
- Act as a reference laboratory for the region, i.e. through analysis of reference samples, as well as execute specific types of analysis not feasible elsewhere (e.g. through lack of capacity, equipment, experience);
- Facilitate and possibly host certain training and inter-calibration exercises to be organised by the project;
- On the basis of the results of the monitoring programme, compile a regional synthesis report on water and sediment quality;
- In cooperation with IAEA Monaco and institutions in the region, develop a long-term regional monitoring protocol.

The appointment of the CSIR coastal researchers as RAC reflects the intention of the Council to generate nationally and regionally relevant research products. The CSIR maintains a motivated group of marine and coastal ecologists, oceanographers, chemists and chemical technologists. DEAT, through MCM is primary Department managing national participation in GPA activities and delivery on the WIO-LaB project represents closer cooperation between the Department and the CSIR.

TROUBLE AROUND MARINE SCIENCE *H. Kleinschmidt*

DISCLAIMER

The SANCOR Steering Committee encourages robust, indeed provocative, debate about any matters relevant to the Marine Science Community. The opinions and views expressed in this article are not a reflection of the views of the SANCOR Steering Committee or the Editors of the SANCOR newsletter. We will allow opportunity for rebuttal where appropriate. Thank you to all who support the SANCOR newsletter.

Like so often since 1994, we have incredible opportunity, but if we do not plan carefully, we might also have less than what we started with. Our marine resources, like those anywhere in the world are increasingly under pressure and if we don't take appropriate steps now, the harvest from the sea, for our children, is likely to be a fruitless search across our oceans that may have become vast deserts with no sustainable life.

In South Africa, due to research and scientific capacity and maybe even due to variable levels of management and policing or compliance capacity, our fish stocks, it can be argued, are in better shape than most. Perversely, white domination and allocating quota's to a small pool of privileged companies during the apartheid years probably also protected fish stocks. The reality that many fish species know no national borders or EEZ demarcations causes us today to take a close interest in what happens in neighbouring waters as well as on the high seas. The escalating scramble for fish globally affects us and will affect us increasingly over the coming decades.

The knowledge and management of the oceans within territorial waters and on the high seas remains deficient on a globe that is racing ever faster to find ways of exploiting sources of protein to feed hungry and demanding humans, as much as holding the promise to yet discover sources of marine life that have the potential to provide fabulous wealth for some.

Pity the under-developed country who hire sporadic science from a 'developed' country to access the status of their stock and who then rent their oceans to an industrialised country to exploit these stocks, with little capacity to patrol or enforce effective compliance. The fishing practices now taking place in countries such as Mauritania, Angola or Mozambique bear the hall marks of impending disaster. Speak to those who fish in their waters over a beer in a Cape Town pub and they agree that a catastrophe is in the making. In the mean time they keep hoping for another year of bumper harvests.

This dismal outlook is not shared by all. Amelioration of peoples' needs and short term profit often stand in the way of sound environmental management. And fishers themselves are notorious in their optimism to find another fish until the last one is gone. The tragic wait for cod to return to the north Atlantic explains this most lucidly. And scientists too have reasons why they are reluctant to call their modeling into question when things turn out differently from what they predicted. All this stands in the way of the debate we should be having.

In the SA context a crises has been looming for years. We are, I contend, preciously close to a possible calamity; for this to be averted we need a robust debate leading to concerted undertakings and a clearing of the air. Our Government is an enthusiastic proponent of, and wants to participate fully in the dangerous world of what is called the new global economy. They may have no choice and in the absence of alternatives it is probably all you can do: participate and make the best of it. But therein lurk dangers that need careful interpretation and analyses.

Vast amounts of development money are spent on what is euphemistically called 'capacity building' but generally this adds up to precious little. What capacity is being built in Africa is mostly siphoned off later when powerful predators with better working environs employ Africa's best, whether in Canada, the UK or Australia.

Marine science, like other academic disciplines, flourishes if there is critical mass. What is meant by this is that cutting edge science relies on scientists in reasonable numbers rubbing shoulders with each other, preferably in a node of institutions that are close to each other. The idea that single digit student numbers dotted along the African coastline will eventually provide capacity for each nation state is a pipe-dream. The evidence is before our eyes: those we train tend to go elsewhere and those who require research have it offered through consultants who traverse the globe and ply their trade wherever it is needed. It is no accident that there are places in Australia capable of servicing the needs of Pacific Islands as well as various African states and elsewhere. But you might substitute Australia with the U.K. or Canada as well as one or two others.

South Africa and the southern Cape in particular have the makings of being a marine science hub. At present however there is a general lack of vision and we would seem capable of squandering what chance we have of meeting our national needs, let alone serving wider African needs. There is a cluster of four universities and a sprinkling of private institutions in this area that provide the best chance for Africa to harbour its own marine science powerhouse. One positive sign came from Dr. Mayekiso recently when he called for more resources to be put into the training of marine scientists.

In the interim however we lose marine scientists to other countries. Poor pay is not the most important reason; poor working conditions and a sense of worth-

-lessness play a far greater role. When a previous DG of the Department decreed that the name of the Departments marine institution be removed overnight he had little grasp of the damage he did to the corporate soul of that institution. Since then little has changed and one can hear the sigh of relief under the breath of senior officials when another scientist goes: good riddance of another horrible white man.

But the generally white, male and mostly ageing marine science establishment themselves have much to answer for. They struggle to enjoy credibility when they enunciate their findings in a democracy where the poor now have a voice, and generally simply do not trust or believe their findings. They are, in my view, only vaguely aware of the dilemma they face. They do not go out to explain or justify their research to the great mass of disaffected fishers. They failed to grow a new crop of scientists going back to the mid eighties. Whether black or white, there is a generation missing in marine science, leaving us with an age gap that also shows up a colour gap.

Retired Prof Siegfried noted in an article some years ago: The marine science establishment should stop bleating about the way they are being viewed or treated in the new country in which they find themselves. Previously they hob-knobbed with the establishment, but due to their dispositions have made no attempts to hob-knob with the new establishment. Maybe there is something in this too.

And a universal complaint about marine scientists compounds the problem. Like elsewhere one may accuse them of being the secret society of marine scientists. For them to be acknowledged they need to tell others what it is they are doing! If no-one understands or hears you, forgive those who dismiss you. Never could this have been demonstrated more clearly than in the recent litigation in the pelagic sector where a highly intelligent Prof Doug Butterworth continues to struggle to explain his mathematical model to a perplexed industry, other marine scientists and now, alas to various judges hearing the cases. In a better explained situation litigation could have been averted.

But there is another side to all of this: The debate about transformation needs to take the global context into account. Frankly, we should hold on to our marine scientists for all we can. Most of them are good men (and one or two good women; exclusivity did not, it would seem, extend to gender either) and yes, they may not have stood in the trenches fighting apartheid, but neither are they rabid racists out to defeat the new order. Generally the transformation debate comes across as too simplistic. Whether by design or implication, the future world is not one that is either made of white of black scientists: In our own self interest as a nation we need them all.

The new crop of students is thin. Although some 90% of those trained are black, their numbers are too small to meet the demand let alone creating 'critical masses. To achieve this we need to put marine science into the centre stage of our academic world; at present it is not attracting black or white students. To build a new cadre of marine scientists in our country takes time, wisdom and above all leadership at all levels: academic, institutional and political. On that score we are currently failing in all three departments.

If we were to get it right, South Africa could be a powerhouse for marine science on the African continent. We could serve our own needs. We could do better science that ensures that threatened fish stocks are properly managed or even re-built; fish species not currently exploited could be managed and contribute towards national wealth and job creation; aquaculture could take off consistent with trends elsewhere in the world; and beyond this, South Africa could export its skills into Africa and elsewhere and deliver service that is currently the domain of the UK, Australia, the USA and others.

As Nike used to say: Just do it!

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PUBLISH OR PERISH

P. Clapham

The physicist Wolfgang Pauli reportedly once told a colleague, I don't mind your thinking slowly, I mind your publishing faster than you can think. Certainly, biology has its share of individuals, whose zeal for publication exceeds the thoroughness of their analyses, and who seem| more interested in getting their research into a high-profile journal than in, well, getting it right. But a much larger problem lies with scientists who work for years but rarely submit their results to a refereed journal.

There are many reasons why this failure to publish is a scientific crime. The most obvious is that the information is lost to the world. When the scientist who has studied species X for two decades - and published not one jot of data - gets hit by a truck, most of that knowledge will be buried with him or her. The person lying under the truck's wheels may well have stimulated many colleagues, probably by presenting some findings at conferences (a common dodge to avoid actually writing something up). But without publications, that scientist's work will have been largely wasted.

Part of the problem, if I may be permitted a dubious food-related metaphor, is that some scientists live for the hunt, not for the cooking and serving. These are individuals who love to solve problems. For them, results always lead to more questions, which lead to more studies, which lead to more questions, and on and on. Instead of taking time to write up the work they've finished, they keep

returning to the field. The field is fun.

Yet all research scientists - especially if they receive public funding - have a solemn obligation to publish their results. We don't disseminate information just for amusement or academic satisfaction. We do so because, ultimately, judgments about the management and protection of any animal or plant population should be based upon the best - make that the best available - scientific data. Information that sits around unpublished for years is worthless to managers and to other scientists, and thus does nothing for the conservation of the organisms we study.

Publications are indeed everything in science. They are the fertilizer (no jokes, please, especially about any of my papers) that stimulates ideas in other scientists. Published knowledge is assimilated by colleagues and leads to more research: hypotheses are modified, rebutted, or confirmed, new paradigms are developed or old ones discarded. In a very real sense, publications are the scientific method.

Another vital reason to publish is peer review. Granted, the peer-review process is far from perfect, and we've all seen papers that are inadequate or just plain wrong, but which nonetheless managed to sneak through review unscathed. Ironically, some of these are in the highest-ranked journals, some of whose reviewers are, I fear, too busy or ill-chosen to do a good job. My friend Paul Wade and I joke about starting a journal called Nature and Science Rebuttals; we're convinced it would have a huge following.

But most of the time peer review is a very useful, constructive process. I have probably learned more about the business of conducting research from referee comments than from any other single source. Some of those reviews spared no feelings, but that's okay; I have never taken comments personally when they were given in good faith, which they almost always are.

Those who do not submit their research to peer review are preventing their work from attaining its full potential. Worse, they risk making uncorrectable mistakes in study design. You can fix bad analysis and poor interpretation, but you can never redo a long-term field study. Imagine someone who has toiled away forever without publishing, and who finally submits his or her life's work to a journal only to be told by the referees that because X, Y, and Z weren't incorporated into the study design 10 years ago, the work was largely a waste of effort.

It is all too easy to talk endlessly about one's ideas, and those who do this often become trapped in an illusory feedback loop. Talk to the public or to any non specialist audience, and they'll of course tell you how terrific your theories are (they don't know any better); and if you hear enough of this unfettered praise, you may actually start to believe it. But run those same ideas past an expert referee, and you may find them suddenly wilting under the scrutiny.

This brings me to a rather less obvious reason to publish. As someone who has published around 100 papers, I can unequivocally tell you this: committing your work to paper forces you to think about your research in ways that you never will by simply talking about it. First, it requires that you carefully organize that sprawling mass that is your data. When that's done, the act of putting your methods, results, and discussion into words obliges you to define your thoughts quite precisely, and to consider the meaning of your work far more deeply than you ever will for a talk. Start to write and you'll find ideas occurring to you that had never surfaced before. What's more, reading other papers will expose you to many concepts (and problems) that you had not previously considered. But if you do not do this, you will not be doing your research justice - guaranteed.

To state that those who don't publish may as well not do the work in the first place is undeniably harsh, though not unreasonable: if you don't publish, you're wasting everyone's time and taking much-needed funding away from other scientists. It isn't that you need to become one of the behemoths of publication. (I am thinking here of a couple of individuals in my own field - Hal Whitehead and Randall Reeves come to mind - who publish so many papers of such consistently great quality that I find myself worrying about them: do they ever sleep?) But you do need to publish at least the most significant parts of your work.

Not that the writing of a scientific paper is an easy task for the novice. The late Bill Watkins - legendary for both his science and his red pen - informally reviewed my own first effort, and when the manuscript returned to me I thought he had ritually sacrificed some small animal over it. I don't know how many publications went by before the writing of a scientific paper became routine for me, but one day I suddenly realized I was no longer agonizing over structure and content. So take heart: it gets easier with each paper you take on.

If you really can't write well or you don't have the time to learn, then find someone who can. Biology is full of bright young graduate students, many of whom have strong writing skills. By having them write up your data, you'll get the work into the public realm and give those students experience and a junior authorship or two to add to their resumes.

Finally, all of you students who are contemplating your future in an uncertain and competitive job market, know this: nothing does more to further your career than publication. Publications say that you are serious about research, and can take the scientific process all the way through to completion. I have a rule that I've applied ever since my first publication: always have at least one paper in review at any given time. Keep to that, and in a few years you will find your curriculum vitae expanding to a surprising extent, and with it your career opportunities.

So whether you're new to the field, or someone who has been working for years on an unpublished long-term study

- you know who you are - take the time to write up your research. Not an hour a day between lunch and your next meeting - that doesn't work. To really plunge down into the well of ideas, you have to find a large chunk of time and do nothing else. You need to submerge yourself, for only then will you find the unbroken concentration that allows you to fully explore your data and the ideas and issues to which they pertain.

Papers are your legacy to science. So begin now. Plan no more field work for a couple of weeks. Disconnect your phone and turn off your e-mail. Then take your sexy new laptop on a date to the nearest library, dust off your data, and send your work out into the world. You'll be happy you did.

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FIVE EUROPEAN COUNTRIES IN ONE SABBATICAL

J. Lutjeharms

The main impression from my visit to leading oceanographic research institutes in five European countries is the overwhelming opportunities for close collaboration, student support and pioneering oceanography in the South West Indian Ocean that are going to come about during the next decade. If the observational base in the Department of Oceanography at UCT is not strengthened, these opportunities on our very doorstep may well pass us by.

The aim of my sabbatical was to take up some of the invitations I had received to a number of oceanographic institutes in Europe. These stays were to foster collaboration, to write up a number of publications – both individual and in collaboration – and to plan future research work.

I spent three months as Guest Professor at the renowned Institute for Marine and Atmospheric Research at the University of Utrecht in the Netherlands. During this period I managed to bring the manuscript of a book up to date, contributed to a number of publications (see addendum), gave a number of talks, sat on the committees for the thesis defence of two PhD students and helped plan a session of the EGU (European Geophysical Union) for which I was co-convener. This EGU session was in some respects the final element of the highly successful Dutch/South African MARE/ACSEX cruise programme in the South West Indian Ocean. UCT had been a very active partner in this programme and a number of our participating students were thus funded by this programme to go to the EGU meeting in Vienna. During my stay I was invited to visit the NIOZ (Dutch Institute for Sea Research) on the island of Texel for a few days. I was also invited to attend two planning meetings for Dutch oceanography, one of which dealt with plans to carry out a very large research programme in the South West Indian Ocean starting in 2007. My host in the Netherlands, Prof. Will de Ruijter and I am trying to make sure that UCT once again becomes a key partner to this planned Dutch programme. It will naturally depend on what special skills and knowledge UCT can contribute.

I had been co-editor of a special issue of the journal *Deep-Sea Research* to recognise the contribution of Dr Walter Zenk to the field of observational oceanography and was honoured to be invited to be a speaker at the international colloquium to mark the occasion of his retirement. At this colloquium the special issue was ceremoniously handed to him. It was a festive occasion with a whole collection of colleagues from all over the world attending, many of whom I had not seen for some time. I spent the rest of my time at the Leibniz Institute for Marine Sciences in Kiel (Germany) working on some papers with local colleagues including one on the modelling of the Agulhas Current, planning proposals for running numerical models on the German supercomputer in Stuttgart and discussing future collaboration with a number of colleagues, including the Alexander von Humboldt Awardee, Prof. Gerold Siedler, an observational oceanographer who will start coming to UCT later this year.

The third stop was at the University of Gothenburg in Sweden. We have collaborated for some time under the Swedish/South African bilateral science agreement and Prof. Lars Rydberg has visited UCT a number of times and co-supervised some Mozambican students at UCT, so the invitation to come as a Visiting Scientist came at an opportune time. With one of the students, Mr Alberto Mavume, we worked on a manuscript on hurricane intensification over the Mozambique Channel and with a team of local academics planned for capacity building in Mozambique.

I was asked to come to the Bjerknes Institute of Climate Research at the University of Bergen in Norway as Bjerknes Visitor. This period coincided with a number of important meetings that were planned in Bergen. My host, Prof. Tor Gammelsrød, arranged for me to give a Bjerknes lecture and to attend an international workshop being held on ice and climate. I also visited the Nansen Environmental and Remote Sensing Center where a UCT graduate, Bjørn Backeberg, is doing an MSc, attended part of a meeting on the Fridtjof Nansen programme and took part in a number of informal meetings on the WIOMEP (West Indian Ocean Marine Ecology Programme) the proposal of which is to be submitted to the GEF (Global Environmental Fund) in July of this year. If successful, this programme will include exploratory cruises in many parts of the South West Indian Ocean. The scope for fundamental research, international and regional collaboration and training of post-graduate students will be enormous. Not only the Norwegians, but also the Swedes, Germans and Dutch are very keen to be included in this effort and to contribute. If successful, the potential

importation into the region of a large number of foreign experts during the next decade could be of considerable value to the oceanography of the region and UCT.

My last stop was at the University of Pisa in Italy. The zoologists of this university are world experts on the ability of organisms to find direction and they have a research programme in the Indian Ocean to study the behaviour of sea turtles. I had collaborated with this group, lead by the famous Prof. Floriano Papi, before - with substantial success - and was invited by the *Scuola Normale Superiore* to extend our collaboration. This establishment is considered the foremost academic institution in Italy and I was particularly honoured by this invitation. My host, Dr Paolo Luschi and I worked on a number of manuscripts on the navigation of sea turtles from the Maputoland beaches, showing that different species exhibit totally different strategies.

My wife and I were overwhelmed by the kindness, hospitality and support of a large number of colleagues in all the countries we had the opportunity to visit. To all of them our heartfelt appreciation and thanks. It was wonderful to see a number of colleagues I had not expected to see again. I feel satisfied that I made good progress on a number of manuscripts and research proposals during this sabbatical and strengthened collaboration where this had weakened a bit during the past few years. Prospects for lots of valuable cooperation in the near future look excellent. With regular progress reports by e-mail by a number of my post-graduate students and collaborators at UCT I also feel satisfied about my mentoring from afar. In a number of ways I experienced this sabbatical as quite demanding, particularly physically. The fact that toilets in the zoology department in Pisa were marked XX and XY also required some serious digging into my rusty knowledge of human chromosomes! I thank UCT for sabbatical leave, the NRF for financial support and Mrs Helen King for ably keeping the fort during my absence.

STUDENT'S CORNER

SANCOR: An Opportunity to Grow

N. Kruger

We have often heard the saying "It's not what you know, but who you know". This saying is as true for science as for business (believe it or not). SANCOR is a powerful network of marine scientists, crossing all institutional boundaries and providing an opportunity for students to connect with each other and more experienced scientists in their field. The SANCOR seminars and SANCOR newsletter are forums for sharing our work and testing our ideas. We also gain access to more established scientists and glean from their years of experience. As students we are new to many aspects of our field, including funding applications, important conferences, how to build a body of work, job applications, etc. This is where SANCOR becomes a powerful tool that we can use to further our developing careers.

The SANCOR Western/Northern Cape Student Workshop 2005 was held at the University of the Western Cape on 1 April 2005, organised by Mr David Miller (SANCOR Student Representative) and Miss Pavitray Pillay (SANCOR Secretariat). Thirty-five students attended representing 5 institutions, UWC, UCT, Cape Peninsula University of Technology, CSIR and M&CM. Dr Kim Prochazka (Chairperson SANCOR Steering Committee) welcomed us and declared that the workshop was about us, we could gain from it or not, but it was up to us.

Ms Jocelyn Collins informed us of SANCOR's Capacity Building Initiative (CBI). They had the task of surveying marine science students to determine why students were interested in marine science, why they are lost to the field and how to increase the number of previously disadvantaged students. After an initial survey from 1994-1998, it was decided that MSc bursaries should possibly be extended to 3 years, an increase in female role models was necessary and there should be an increase in marine awareness campaigns. The CBI is assessing the current situation to determine whether the demographics are more balanced and whether younger scientists are being trained.

An interesting discussion followed the question about the difference between corrective action and capacity building. Corrective action was seen as the balancing of numbers of different race groups and genders at all levels (a political action rather than training), but the drawbacks of corrective action included the assumption that there were enough qualified people from all race groups to fill those positions and that they were motivated to be in the marine science field. Capacity building implied the training up and motivating of young scientists; equipping them for the working world. It was also suggested that capacity building should not be limited to students from previously disadvantaged backgrounds, but all young, inexperienced scientists should benefit from it.

The problem of job availability was raised during the discussion. It was generally agreed that one cannot motivate students to remain in marine science and build capacity without creating more jobs for those students. This issue must be addressed.

It was mentioned that mentorship within the marine science community is important, both of "young" institutions and of individuals in the working or studying environment. These do exist. For example UCT have a mentorship agreement with University of Fort Hare in the Eastern Cape. Also M&CM have an internal mentorship programme where young upcoming scientists have more estab-

lished scientists available to help them find their feet in the work situation. Students are generally mentored by their supervisors.

After gaining the basic understanding of what SANCOR is, we were asked how their service to us could be improved. At the moment we are regularly informed of conferences and job opportunities in the marine science community. Students suggested that the website be updated regularly. If students would like to start small workgroups in which they could discuss their ideas with people in the same field, they should contact Pavitray Pillay and she will provide contact details for others in the same field. Students were encouraged to make use of the SANCOR network. SANCOR hosts the Prestigious SANCOR travel award (R15 000) for PhD students interested in attending international conferences. For more information visit SANCOR's website.

We were then introduced to the South African Environmental Observatory Network (SAEON). This programme aims to establish 7 nodes in South Africa, 2 of which will be marine and coastal nodes (offices) in South Africa, where long-term ecological monitoring will be co-ordinated. Most research spans short periods of time or forms part of student projects. Short-term results can be misleading because natural variation can often cause as great a change in the environment as human impact. The only way to determine which observed changes within ecosystems are due to natural variability and which to human impacts is by long-term monitoring. Our workshop discussion will be added to those held around the country on the subject and compiled into a report by Dr Barry Clark (ANCHOR Environmental Consulting). It was a great opportunity for students to be involved in decision-making processes, especially since we would be the ones carrying on the work one day.

The afternoon session started with Dr Mafaniso Hara (PLAAS, UWC) introducing us to the more human aspects affecting marine science with his seminar entitled "Social Science in Marine Resource Management". He highlighted the importance of incorporating an understanding of the social and economic environment into our work. Often the motivation of socio-economic sectors and the biological sectors will be in opposition, but we must realise that the decisions are made by government and their decisions are made based on politics, which is what they are trained to do. The best results would be attained when all these aspects are reconciled to each other.

This was followed by Dr Coleen Moloney informing us of attributes that can advance or hamper our study/employment prospects. She described the perfect student/employee as enthusiastic, literate, displaying initiative, reliable and competent, honest, flexible, numerate, dedicated and tenacious, a critical thinker, careful and -would you believe it?- NICE (or rather not obnoxious). How many of those apply to you? But we were encouraged by the fact that no-one is perfect and we are all working on it.

Finally, Dr Helmke Hennig (AquaKnowledge) had us in stitches with his comparison of scientific writing to a common e-mail. He reviewed things that were locked somewhere in our subconscious about what makes good writing and gave us some excellent new ideas. All these principles are extremely important in our careers as communication of our findings to both the public and the scientific community is essential. To put it plainly…PUBLISH YOUR WORK. This is key to your career.

The workshop ended on a high note with tea and cake; and many interesting discussions followed from the workshop. If nothing else we met students from other institutions and SANCOR achieved its goal of networking between students.

SANCOR would like to thank all the presenters and facilitators and most importantly SANCOR would like to thank all the students who made a concerted effort to attend the workshop.

STUDENT GRADUATIONS in April 2005

At the SANCOR Forum 2005 Meeting, the SANCOR Community decided that it would be a good idea to publish the abstracts of students who have graduated so that their research projects can be showcased to the SANCOR Community. The Editor would like to invite all students who have or will be graduating **this year** to please submit a brief abstract of your research to the SANCOR Student Corner.

Loggerhead (*Caretta caretta*) and Leatherback (*Dermochelys coriacea*) nesting activity along the Maputaland coast (South Africa):1965 – 2002

Wright, R.V

From 1963 until the present, loggerhead (*Caretta caretta*) and leatherback (*Dermochelys coriacea*) female turtles nesting on a 56-km stretch of beach in Maputaland, on the northeast coast of KwaZulu-Natal, South Africa have been tagged and monitored. In this study, population trends, size, preference for timing of nesting and nesting sites, and seasonality in nesting activity and nesting area were analysed and the effectiveness and efficiency of the monitoring programme assessed. Since the programme's inception, approximately 46893 loggerhead and 11509 leatherback females have nested on the Maputaland beaches. A non-linear relationship was found between the numbers of nesting females of both species over time, with three distinct phases. Large interannual variations in nesting numbers were evident for both species, as were synchronized seasons of elevated or depressed nesting activity. While Maputaland leatherbacks appear to be approximately the same size as in populations elsewhere, the loggerhead females were significantly smaller compared to other populations. Peak nesting activity occurred from November to January and was associated with warmer sea temperatures, as was the subsequent emergence of hatchlings. Marginal temporal shifts in the nesting numbers of both species were evident during peak

nesting-activity seasons, with the peak nesting period beginning slightly earlier than usual. Peak nesting-activity seasons appeared to follow El Niño events with a lag period of between 0 and 2 years. Separate 'preferred' nesting areas were found for each species, largely associated with the offshore seabed topography. The loggerheads exhibited a fairly narrow nesting-area distribution in the north, while the leatherbacks utilised a far wider area in the southern region. The length of the 'preferred' nesting area (km) was strongly correlated with the total number of nesting loggerhead and leatherback females. No major nesting-area shifts were evident over the programme's duration. However, distinct spatial shifts, with increases in the length of the 'preferred' nesting area, were evident for both species during peak nesting-activity seasons, and was possibly related to the increased influx of nesting females. Interspecific competition appeared to be of little importance in Maputaland, as both populations displayed strong synchrony in nesting declines and increases over time, and while both populations have increased, no major shifts in the 'preferred' nesting area of either species have occurred. No correlations were found between the Southern Oscillation Index (SOI) values and nesting activity or changes in nesting area. However, a negative correlation was found between the average curved carapace lengths (CCL) of both species and the SOI values, most likely related to sea surface temperatures and the resultant changes in food availability that occur during El Niño events. Disturbance incurred during monitoring caused, at most, only a 5% reduction in the nesting rates of both species. To date, the conservation efforts of the monitoring programme appear to have come to fruition, with both the loggerhead and leatherback nesting populations healthy and in a more-or-less stable state. The importance and value of continuing the current monitoring programme was emphasized, and several management and sampling strategies proposed for future seasons.

EDUCATION & OUTREACH

Loving your marine ecosystem

E.Tronchin

A beautiful day dawned on Durban's Bluff on Saturday the 16th of July. A school of around 40 dolphins surfing the glassy 5 foot swells at Garvies marked the start to a wonderful experience that unfolded over the next two days. With an unseasonably warm winter's sun on our backs, Salomi Enslin (UCT) and I made our way along the crest of the Bluff to WESSA's Treasure Beach Environmental Education Centre, where we met up with three other young and dedicated marine ecosystem enthusiasts; Cloverley Lawrence and Vuyiswa Radebe of Ezemvelo KZN Wildlife, and Harry Mbambo of Natal Sharks Board. Together we had taken on the responsibility of inspiring and entertaining around 100 matric learners, their parents and teachers from rural KZN communities, over the coarse of the weekend. Under the banner "Loving your marine ecosystem", a series of workshops began, celebrating the marine ecosystem and the Department of Science and Technology's (DST) Biosciences Month July 2005.

The Saturday workshop involved participants from two schools in Umgababa; Mcothoyi and Mngan'wakhe High Schools. The Sunday workshop saw participants from Mathubesizwe High School situated roughly 36km inland from Stanger. Both groups took part in the workshops completely at the expense of DST through funds administered by the South African Agency for Science and Technology Advancement (SAASTA).

The participants arrived by bus and were led straight into the first session of the workshop with no time to spare, every effort being made to jam-pack the event program with presentations and interactive exercises. To kick it all off, the five presenting environmental educators introduced themselves, after which Cloverley brought the audience up to speed on a definition of the marine ecosystem and descriptions of its components and a diverse array of organisms. A stunning, picturesque slideshow captivated the audience with a range of photos from a breaching whale to a delicate basket star and a jellyfish that the audience unanimously thought was a parachute. This tied into an interactive exercise where participants designed a food web using picture cards of assorted marine plants and animals. The objective was to convey to the audience the interconnectedness of all the organisms in the marine ecosystem and the idea that the ecosystem should be thought of as a super organism, an idea they all seemed to understand and accept.

After a mid-morning tea, the second session began with awe-inspiring talks on natural disturbances in the marine ecosystem, from Cloverley's terrifying account of the large scale destruction of the Tsunamis in the eastern Indian Ocean, to my less traumatic explanation of the frequent and predictable disturbance to rocky shore organisms caused by the changing tides. The audience was taught what causes tides and how to interpret a tide chart.

After a tasty lunch, Vuyiswa lead the audience into a well-crafted discussion on human impacts on the marine ecosystem with pertinent examples from the KwaZulu-Natal Province for the audience

to relate to. The concept of co-management was instilled through a presentation on the successful Sokhulu subsistence mussel-harvesting project near St. Lucia.

Salomi then delighted the audience with a fictional story of an albatross named Derek and the unhappy ending of his life-partner Sophia as part of the bycatch statistics of the South African long-line fisheries.

Harry followed this up with a very slick presentation on shark nets and current research on down scaling their use in KZN.

The day drew to a close with an informal stroll along the magnificent Treasure Beach intertidal, where the participants got to wet their feet and see much of what they had learnt about in living colour.

Before departing, each school was given a range of marine ecosystem related posters and a copy of Branch *et al.*'s Two Oceans, to help them identify marine organisms. This, together with some instruction on how to preserve animals, press seaweeds and organize fieldtrips to the shore with spring low tides, it is hoped that the schools will continue to cultivate their interest in the marine ecosystem in time to come.

The workshops were massive fun for all concerned and the smiles on the participants' faces were an indication of a job well-done. Special thanks go to Collette Vosloo and Daphne Lekgwathi of SAASTA, the staff at WESSA Treasure Beach and the UCT Botany Department secretaries for their logistical support in realizing such an amazing celebration of love and appreciation for the marine ecosystem.

Top: Vuyiswa Radebe, Cloverley Lawrence, Harry Mbambo. Bottom: Salomi Enslin, Enrico Tronchin

Two Oceans Aquarium Coastal Clean Up

A. Flanagan

The Two Oceans Aquarium has adopted Mouille Point Beach as it's commitment to clean up the coast.On the first Wednesday of every month, Aquarium staff head off to the beach between 13h00 to 14h00 to clean up. We have been cleaning the beach without fail since October 2004. Things get really exciting when we find the weirdest of items on the beach. We have started a competition to see who finds the most bizarre item. So far we have found a pair of red high heel shoes, the cover of an erotic/porn video and a dodgy looking handbag. These were found in the midst of straws, rusty cooldrink cans, take-away food packaging, plastic cooldrink bottles, fishing wire, and more litter!

On 6 July 2006 during our monthly beach cleanup, a group of children played, barefoot, on the sand and at the water's edge, oblivious to the rubbish surrounding them. There were used condoms, rusting cool drink cans, broken glass, twisted wire and many other disgusting litter.

Continuing our commitment to the oceans we will once again participate in the International Coastal Cleanup day on 17 September 2005. We invite staff, members of the Aquarium (Solemates), family, friends and even those who walk past on the day to help clean up Mouille Point beach, the Sea Point promenade, grass areas and parking areas. The day promises to be a festive event with music, cooldrinks and lots of positive energy.

But you don't have to wait until September! Join us on the first Wednesday of every month to clean up the beach as well as on Saturday 17 September 2005.

If you would like more information about our clean ups or would like to contact me, please call me on 021 418 3823 or e-mail me at marketing@aquarium.co.za

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MCEN WESTERN CAPE MINI-CONFERENCE - A HIT

N. Hoal

The conference was held at the Two Oceans Aquarium. The general atmosphere of the conference was riveting and intellectually stimulating. We had plenty of time to network and many new faces were seen. The conference was open to all and not only to MCEN members. Pavs could not even accommodate all the applications as she had already accepted 62 people and the venue did not lend itself to more seating. We even had people from as far a field as the Eastern Cape, West Coast and Hermanus attending.

Dr Steve Brouwer was our keynote speaker on Friday. His talk on "Zen and the art of being a Marine Biologist" brought home that as Buddha first lived in wealth but later changed and lived in poverty so were our seas once wealthy but resources are scarce. We heard that Dr Brouwer discovered that there were two species of kob. The one species, the Dusky, can live up to 40 years but only starts breading after 14 years and the other species, the Dilorus, lives up to 20 years but can start breading after two years. Not many people can recognise the difference between the 2 species and therefore the Dusky has been overexploited.

Other fish such as the Roman are becoming smaller as the biggest female changes sex and becomes male. The biggest fish are constantly caught and therefore each generation is becoming smaller.

Today scientists are looking at the effect on whole ecosystems and not only on individual species. Through natural causes lobsters, which usually eat whelks were removed from a certain area. After a period of time is was decided to re-introduce a 1000 lobsters. In the meantime the whelks had multiplied to such an extent that they devoured the 1000 lobsters. So prey became predator. This is an example of a huge problem when top predators are taken away.

There is still hope on the horizon as there are ecosystem management systems in place. Fish, lobsters etc. are tagged and can be monitored. The information is used for management. The many marine protected areas actually enhance fisheries and can be used as to compare exploited and unexploited marine systems.

A shoaling activity—Networking

The next morning we splashed out with Alison Kock's talk on Leaping Predators. Alison is doing research for her doctorate on the Great White Shark in False Bay and especially surrounding Seal Island, which is home to 70 000 seals, near Hout Bay. She told us that sharks were more like mammals than fish. They have spotted very large specimens of 5 ½ m. Sharks are very inquisitive and will investigate anything. They are also very social animals and interact with each other by body language e.g. they will arch there backs and gape, they don't often bite but interact in a non-aggressive way. Seals are very popular food. The sharks feed mostly only in winter on the seals at Seal Island. They are most active after sunrise. You can identify shark attacks by spotting the shark reaching out of the water, see a splash or notice sea birds (gulls) or a large pool of blood. The highest predation rate in the world is recorded in the area around the Seal Island, 85% of the attacks are on juveniles.

Mike Meyer's talk on A Top Predator took us on another wave of learning more about sharks and how they go about attaching real time satellite transmitters to the shark's dorsal fin. The shark is lured into a cradle that hangs next to the research vessel, where it is safe to work with the sharks because there is a funnel at the opening to direct the shark. The shark relaxes as soon as it is covered with a towel. It is no shark tail but the truth that you should not touch a shark's tail as it does not like it and some of the men landed in the water when they touched its tail. The shark is also given oxygenated water while they are fitting the satellite transmitters and if time permits veterinaries take blood samples. The shark reacts immediately when its gills are touched, so this is done to check if the animal is still in good condition.

Intense concentration on the presentations—so much to learn!

We then dived into the depths with Tammy Robinson with her talk on Mysterious Animals of the Deep. We were told of a giant squid with a beak and eye balls as big as soccer balls and the major finds have been near South Africa. They eat sperm and southern right whales and it is recorded that it even tried to tackle a battle ship but came off second best when it ended up in the propeller! The mega mouth shark has a very big head and mouth; it is found just off America in the South Pacific and in Japanese water. It sifts out plankton. The viper fish has very big eyes to use any possible light that comes in. It has very big teeth that sticks out of its mouth and eats squid

and ctenophore (comb jellies). It is fortunate that these animals live very deep down in the sea so that we will hopefully not have to encounter them.

We then drifted into Cloverley Lawrence's talk on Marine Pollution. Urchins' sperm released in polluted water especially with toxic waste die off and the abundance is far less than in clear water. Mussels are often affected by red tide. Oil spills have a detrimental effect on seabirds as they can not swim or fly when covered in oil. Ocean dumping is also a big problem and is one of the causes of entanglement of sea animals.

Then we went for a run with Carl der Lingen with his talk on See how they run. We were taken on a trip along the east coast following the sardine run and were amazed to see all the scientific data and equipment used in a survey to find out and record information about these annual phenomena.

How many Pelicans are too many Pelicans, by Marta de Ponte Machado blew us away, especially when we learnt that pelicans now prefer to live in unison with pigs on a pig farm instead of a pleasant seaside resort or a lake. The farmer buys chicken intestines and leftovers for the pigs and the surplus is thrown into a hole which the pelicans have discovered and feed on. With this easily available food the pelican population expanded very quickly. In nature the food source is not that easily available. The one problem is that the farmer is now having trouble in obtaining the chicken offal and therefore this food source is now diminishing resulting in pelicans dying. Tests are also done to see if the hormones in the chicken offal have an effect on the pelicans and if they are actually getting all the needed nutrients. Pelicans are also causing havoc in killing off cormorant chickens on the West Coast. The cormorants are already under stress because of reduced food supplies and can not cope with another threat like this.

Professor Frank Shillington talked on What is a Tsunami. The earthquake that caused the latest Tsunami was the 4th largest since 1900. We were told that the whole earth shook. His power point presentation explained the whole phenomena very clearly and why at some places the water first pulled away and other places it was a full onslaught immediately. It is also not only the height of the waves but the force and speed that cause the damage.

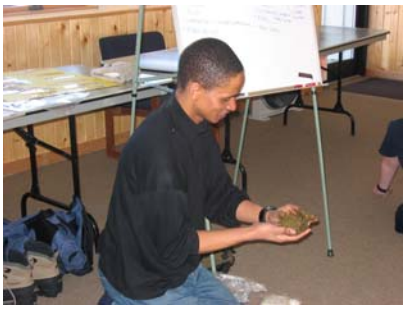
I will really slip up if I don't thank some people for making this excellent conference possible. A special thanks goes to all the above speakers. Thanks to Weston Barwise, Tom Campbell and Lindie Buirski who acted as chairpersons but the biggest thanks has to go to Pavs Pillay who organised and co-ordinated most of this high-powered conference and to SANCOR who sponsored it. Without their input the conference would not have taken place. Also to Andrea Plos from UCT who did the printing of the evaluation forms. Thanks also to the background work of the Two Oceans staff, the venue, facilities and caterers (who really produced top quality food). We also appreciate all the donations for our 'goody bags' which were supplied by the following people: the bags and gifts for the presenters – City of Cape Town; Tony van Dalsen – Reprographics; MCM – Research and Development material; Thomas Peschak – donations of two copies of his book 'Currents of Contrast'; All the MCENers and to every one for just simply attending, we can not have a conference without people.

There are theories about education,

Why environmental educators go into the field

D. Tshingana

you have probably heard a combination of famous confusing terms like national qualifications framework, Out-comes Based Education, No child left behind, Standards Based Education, Profiles of learning and others too numerous to list. Each of these is someone's attempt to define, refine, and capture the essence of learning. Each falls short because we are defining learning not by the learner, but by the expectations of our societies. Outdoors make us go back to traditional education, not the four walls and a blackboard, not a sequence of bells and topics full of theories, but rather connecting our children with the natural surroundings. Long before the Europeans classroom was developed, African native people taught by stories and experience. They provided a framework for discovery, initiative and learning built upon the curiosity and energy of the learner. This kind of education was simple in theory, and pretty effective in practice.



Dumile coating an egg with cow dung

Now we look at the environment as an integrating context, Place-Based Education , and Project Based Learning. More titles, more thesis, but the really important thing that are learning is that environmental education (Marine education) needs to be real, it needs to be hands-on, it needs to be open ended, and it needs the commitment of the learner and the facilitator. I cannot tell you how many times I have seen people stop, mid –stride, and suddenly say something positive about what I 've shown them in the field along our beautiful coastline. You will here such as "Wow this is amazing today I have learnt something new, thank you Dumile" These are the words we would like to here, words to that affect. (Is that learning? Yes) If we consider the discovery of our place in this universe important –it is learning. If we are inspired to look at the big picture and at

the details we have created a framework for discovery and learning.

If we engender a curiosity, we have created the motivation for experimentation, observations, quantification and extrapolation and that is learning. Our job as environmental educators is to give the child the tools and incentives to learn in the field.

Memorization does not make us productive and classroom lectures do not create personal ethos. Power points do not connect us with the people, places, and objectives in the photos. It is through contact, opportunity and time that we learn the great lessons in the out-doors and it is through contact with students of all ages in the natural world. "the great field that makes us effective educators"

"Field science , unlike theology never leads to insanity" Burnbank

South African Institute for Aquatic Biodiversity

"Maiden voyage" of the new SAIAB Bus: National Science Week 2005 outreach

G. Magajana & L. Tatana

The National Science Week is an annual country-wide celebration of science, funded by the Department of Science and Technology. Amongst this year's objectives was to create an awareness of the important role that science plays in people's daily lives, to attract and encourage more youth into science, engineering and technology (SET) careers. In order to realise this vision, the South African Institute for Aquatic Biodiversity (SAIAB) team took the new purpose built bus to its "maiden voyage" into the rural Eastern Cape. This outreach venture was a tight five day programme which started on the 9th of May and ended on the 13th of May 2005.

This was the first outreach challenge for us in our new positions as Education Officer (Gaji) and Education intern (Lulama). The journey proved to be enjoyable since we formed part of a very capable and supportive team; Vanessa Rhouhani, Charles de Vos, Nomtha Myoli and Lukhanyiso Vumazonke who all took part at various points during the trip.

The first day which set the tone for what was to come, began with a somewhat cold winter morning but our level of preparedness could not be matched by the not so friendly weather conditions. Our tea and coffee was almost ready even before we could crave for it, thanks to Vanessa's hospitality skills. The bus was fully loaded with all sorts of things from fish specimens to naartjies, partly sponsored by Fruit and Veg City in Grahamstown, which were given to learners after presentations.

Urban South Africa is a noticeable different place from township and rural South Africa and yet the expectation is that teaching styles and channels through which new learning material is transferred to learners should be uniform. This was one challenge we were prepared for as we developed and negotiated meaning with the learners through interactive presentations. A clear indication to learner's language communication inadequacies and the way learners assimilate new learning experiences was encountered at Ndabazandile High School, a venue used as a centre for the Hamburg area. At this venue there was no electricity contrary to earlier confirmation from the King Williams Town's district satellite office, nevertheless we improvised, not being able to impress learners anymore with our PowerPoint presentation.

The situation, however, worked to our advantage giving us the opportunity to be more learner focussed which is at times lacking with the use of audio-visual equipment, where the human element is sometimes overlooked. Here, use of mother-tongue as a medium of instruction was inevitable if students were to find the experience as meaningful as possible.

The level of interest and commitment of

Photographed at Peddie, some bright learners who received t-shirt prizes

educators was obvious in their attendance and response to the African Coelacanth Ecosystem and Programme Marine Careers workshops we conducted. For us, educators from Hamburg were the most welcoming and showed more enthusiasm than all other areas visited. This emphasized the fact that rural schools who have "nothing" respond far better than the "other" group of schools and outreach adds more value at such schools than the rest.

We visited schools in Peddie, King Williams Town, Hamburg, Mdantsane, Port Alfred and Kenton-on-Sea and our programme on the overall was well received. In total, lessons were presented to 1171 learners and 42 educators. Out of this total 720 were learners doing physical science as a subject, an encouraging statistics. We had an opportunity to meet a few talented learners whom we called "Bright Sparks", these students showed an aptitude for aquatic sciences and could be tomorrow's scientists given the right opportunities.

The Communications Division of SAIAB will be taking the "Bright Sparks" on a tour to our sister organisation, the National Zoological Gardens in Pretoria, hoping to turn the spark into a flame. It became evident from positive comments received in evaluation forms returned, that more outreach visits, especially in the truly rural schools, would be very effective and greatly appreciated.

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CONFERENCES

7TH INTERNATIONAL TEMPERATE REEF SYMPOSIUM

The Marine Science Institute at the University of California Santa Barbara will serve as the host for the 7th International Temperate Reef Symposium.

Dates: June 26 - July 1, 2006
Venue: University of California
Registration: September 2005 with abstract submission in March 2006.
Website: http://www.msi.ucsb.edu/ITRS/
Email: itrs@msi.ucsb.edu.

WORLD PELAGICS 2005

This firmly business-focused conference will cover a full range of topics, focusing on the challenges and opportunities facing the modern pelagic industry, and is an invaluable opportunity to mix with some of the world's major players. The conference will attract decision-makers, fleet owners, processors, canners, buyers, importers and exporters from all parts of the globe. Our last conference attracted over 150 delegates, and this year's conference is expected to be even bigger, with the combination of World Pelagics 2005, Fish Africa and Aquaculture Africa, organized by Heighway Events, creating an unparalleled 'total fish week' in Cape Town.

Dates: 24-25 October
Venue: ArabellaSheraton Grand Hotel, Cape Town
Website http://demo.msgfocus.com/c/0UuJbHxo5Oza .
Telephone: +44 (0)1892 533813, e-mail

VALUE ADDED SEAFOOD 2005

Demand for fish and seafood is greater than ever, with sales of fish and seafood products reaching record levels across Europe. As consumers become more aware of their diet, they look to healthy, nutritious and convenient meal time solutions. Promoting the functional benefits of fish and seafood provides a key opportunity to grow this important section of the value-added market. Now in its fourth year, Value Added Seafood provides a unique opportunity to analyze this dynamic market and identify new opportunities for growth. Value Added Seafood 2005 is a chance to hear the latest market information from the key players in this rapidly expanding sector.

Dates: 27-28 September 2005
Venue: Regents Park Holiday Inn, London
Website: http://demo.msgfocus.com/c/0Uh9o2upcvhS
Telephone: +44 (0)1892 533813

LORAX DVD's

A limited amount of videos and DVD's made from the film and have collated a collection of activity ideas using the Lorax as reference are available.

Lessons from the Lorax

The fishing industry would do well to pay attention to sage advice from Dr. Seuss. *(Adapted from an article written by Frank S. Rossi, Ph.D).*

While gazing out his window at the north coast of San Diego, Theodore Seuss Geisel noticed an endless landscape of "condominiums and look-alike houses." In his eyes, the ever-expanding metropolis exemplified the public's indifference to the environment. After reading many "dull things on conservation, full of statistics and preachy," he decided to make the subject more amusing by having it come to life in a child's story.

This difficult task eventually led to Dr. Seuss's first serious case of writer's block. To escape the concrete jungle of southern California, Dr. Seuss took a trip to the Mount Kenya Safari Club in East Africa. While sitting by a pool, he saw elephants walk across the mountain. The elephants "broke the logjam" and that afternoon 90% of The Lorax, a piece of environmental propaganda, was completed.

The story of the Lorax is a polemic about pollution, impassioned and bristling with confrontation and name-calling. Its main character, a Lorax, is a protagonist who speaks for conservation. On the opposing side is the greedy old Once-ler who tells a young boy how a town is ruined when the magnificent Truffula trees are cut down to knit Thneeds, "a fine something that all people need." The result of removing the Truffula trees is "smogulous smoke" that causes a "cruffulous croak" and "gluppity glup" that chases the humming fish to "search for water that isn't so smeary."

In the final scene, with the air and water polluted, the animals evacuated, and the last tree cut down, the Onceler leans from his mysterious Lurkim and drops the last Truffula seed to the boy, saying, "Unless someone like you cares a whole awful lot, nothing is going to get better. It's not. "The Lorax, by Dr. Seuss, would be his only book banned from school curricula across the United States. It was his slowest-selling book for a decade, until the booming environmental movement of the 1980s made it his most popular. In fact, Seuss biographers have stated it was his personal favourite. The true question at hand is, what are the lessons that this story holds for the relationship between fishing and the environment?

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