

From the Editor

The April – June period this year was an extremely busy time for the GloBallast Programme, with the convening of three major international workshops in Brazil, participation by PCU and Pilot Country staff in three major conferences (invasive species workshop in Spain, 12th AIS conference in Canada and high seas governance workshop in Australia), assisting with preparations for the 49th meeting of the Marine Environment Protection Committee (MEPC), finalising the programme and organizational arrangements for the forthcoming 2nd International Ballast Water Treatment R&D Symposium in London and various technical activities continuing in all of the Pilot Countries, being just a few of the activities carried out.

With MEPC 49 (14-18 July) programmed to make a decision on the holding of a Diplomatic Conference in early 2004, to adopt the draft International Convention on the Control and Management of Ships' Ballast Water and Sediments, this issue of Ballast Water News has a focus on the new Convention.

We are extremely pleased to welcome Mr Andreas Chrysostomou, the new Chairman of MEPC, to share his views on the Convention as Guest Speaker. We also present a report of the 2nd inter-sessional meeting of the MEPC Ballast Water Working Group held earlier this year, which produced the current draft of the Convention to be considered by MEPC 49. To bring us an environmental law perspective, Dr Tomme Rosanne Young, Senior Legal Officer at the IUCN Environmental Law Centre in Bonn, has kindly provided an overview analysis of the draft Convention.

Moving to technical activities carried out in the GloBallast Pilot Countries, we have a progress report on the red-tide monitoring and reporting system being implemented by the People's Republic of China for the Bohai Sea. This initiative exemplifies the type of practical measures that can be taken by ballast water exporting ports to minimize the uptake and transfer of harmful species. An emphasis on source-port measures has been generally lacking in the global response, and it is hoped that visionary initiatives such as this one by China will be broadly adopted, including ideally through the IMO Convention.

This issue would not be complete without comprehensive reports on the three international workshops convened in Brazil, and we 'wrap-up' the newsletter with an article by Dr Geoffrey Howard of IUCN in East Africa, on the 5th IUCN World Congress on Protected Areas, to be held in Durban, South Africa from 8th to 17th September.

The forthcoming meeting of MEPC is perhaps one of the most significant for all of us involved with ballast-mediated species transfers – let us ensure the best outcome for all!



Steve Raaymakers
Contributing Editor

Ballast Water News is the quarterly newsletter of the Global Ballast Water Management Programme (GloBallast), and is produced with the support of the World Conservation Union (IUCN). GloBallast is a cooperative initiative of GEF, UNDP, IMO and other partners to assist developing countries to reduce the transfer of harmful organisms in ships' ballast water, through the implementation of IMO guidelines.

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From the Programme

It was Brazil's turn to set the international scene for the implementation of GloBallast activities during the last quarter. Two high profile, international workshops on Guidelines and Standards for "Ballast Water Sampling" and "Invasive Aquatic Species Surveys and Monitoring" were conducted in Rio de Janeiro and Arraial do Cabo respectively.

The main objective of the first workshop was to review ballast water sampling activities around the world and to provide a forum for discussion and debate comparing methods and results. The participation of more than 20 countries ensured greater global coordination and cooperation, as well as enabling sharing of expertise, experiences and data. The workshop included a number of practical sessions, and was very well received by participants.

The second workshop had a pronounced scientific character and focused on port biological surveys. Participants assessed the possibilities of establishing uniform data recording and reporting standards and for developing early-warning systems for detecting, tracking, recording and reporting marine bio-invasions on a global scale. The workshop stimulated the drafting of international guidelines for invasive aquatic species surveys and monitoring. The generous support of the host country in providing excellent facilities and venues at Rio de Janeiro's Botanical Gardens and Paulo Moreira Marine Institute in Arraial do Cabo deserves wide acknowledgement.

Another long anticipated event included in GloBallast's implementation plan was the first delivery and validation of the training package "Ballast Water Management- an Introductory Course" developed in co-operation with the United Nations' hosted Train-Sea-Coast Programme.

Widespread recognition of the need for training, as one of the most effective vehicles for capacity building, calls for efficient co-ordination of efforts and a collaborative approach between the United Nations agencies that share similar tasks and are developing complementary activities. The partnership between GloBallast and Train-Sea-Coast has produced a high quality training package using the existing resources, experience and infrastructure available within the UN system. This multi-module training course will be adapted for further deliveries in the other five GloBallast Pilot Countries. Some of the modules could serve as a basis for the development of more specific training courses that will be needed following the adoption of the ballast water Convention.

Finally, at a time when the maritime community is looking forward to the coming session of MEPC, GloBallast reiterates its commitment to providing all the assistance necessary in addressing this most serious environmental challenges facing the global shipping industry.



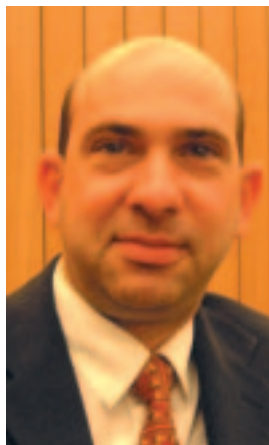
Dandu Pughiuc
Chief Technical Adviser



Guest Speaker

Mr Andreas Chrysostomou
Chairman

IMO Marine Environment Protection Committee



Mr Andreas Chrysostomou of Cyprus was elected Chairman of the IMO Marine Environment Protection Committee (MEPC) at MEPC 48, and will assume this role at MEPC 49 in July this year, for an initial period of one year. He takes over from Mr Michael Julian of Australia, who chaired the Committee since 1997 and who retired in 2002.

Mr Chrysostomou has been involved with IMO since June 1994, when he joined the Cyprus High Commission in

London as Counsellor (Maritime Affairs). From September 2001 he became the Alternate Permanent Representative of Cyprus to IMO. He has a Masters in Business Administration and a Bachelor of Engineering (Naval Architecture and Shipbuilding) from the University of Newcastle Upon Tyne (UK), and before joining the Cyprus High Commission worked as a Naval Architect, Ships' Surveyor and Assistant Ships' Registrar in Cyprus. He is very familiar with IMO processes and the chairmanship role, having chaired the Sub-Committee on Ship Design and Equipment during the last four years and being intimately involved in developing new guidelines on the enhanced programme of inspections of bulk carriers and oil tankers.

As we approach the 49th meeting of MEPC, my first as the new Chairman of the Committee, I am conscious that this may be the most important meeting yet, in relation to the *Draft International Convention for the Control and Management of Ships' Ballast Water and Sediments*.

The introduction of harmful aquatic organisms and pathogens to new environments, including via ships' ballast water, remains a significant threat to the world's coasts and oceans, often causing severe human health, ecological and economic impacts, and the rate of aquatic bio-invasions is continuing to increase in most areas of the world where targeted surveys and monitoring are carried out. IMO member States and the shipping industry, increasingly recognize the urgent need for an effective international regulatory regime to address this threat. The draft ballast water Convention provides the best way forward to ensure a globally harmonized regime.

My predecessor as Chairman of MEPC, Mr Mike Julian (Australia), often stated that the ballast water issue is one of the biggest challenges to be addressed by IMO to date. Because of the enormous engineering, technical, scientific, environmental, economic and social complexities, determining acceptable outcomes has proven far more complex than finding solutions to most of the other ship-based pollution threats that MEPC has faced.

MEPC has been developing an international treaty on ships' ballast water since the early 1990's. It is critical to the successful adoption and implementation of this new Convention, that its requirements are clearly understood, practical, safe, environmentally acceptable and cost effective. The MEPC Ballast Water Working Group, initially under the Chairmanship of Mr Denis Paterson (Australia) and now Mr Mike Hunter (UK), has worked hard to ensure that the draft Convention meets these essential criteria.

In addition to its work on the ballast water Convention, over the last three and a half years IMO, with support from GEF, UNDP and other partners, has been actively providing developing countries with technical assistance, capacity building and institutional strengthening through the Global Ballast Water Management Programme (GloBallast).

The Mid Term Evaluation of the GloBallast Programme, undertaken by external, independent evaluators in 2002, found that the project has contributed significantly to our understanding of some of the barriers and constraints which may be experienced by countries in implementing the requirements of the new Convention, and has provided (and will hopefully continue to provide) many lessons and best practices which can be transferred and replicated both nationally and regionally. The review also found that the project represents a unique and model example of technical assistance being used during the development stages of an international convention, related to global environmental priorities, to reduce the period until its entry into force.

The GloBallast Programme is now establishing cooperative regional arrangements and developing plans for future strategic partnerships, to support implementation of the new Convention. MEPC 49 will be asked to make a recommendation on whether IMO should proceed with funding proposals to GEF and other partners for the future of GloBallast. Considering the outstanding success of the initial four-year pilot phase, and the ever-increasing demand from developing countries for capacity building and technical cooperation, it is sincerely hoped that the Committee will make the appropriate decision.

The development of the Convention is now reaching finalisation, and MEPC 49 will decide whether to proceed with a Diplomatic Conference to consider its adoption in early 2004. A positive decision would represent a major and visionary breakthrough in addressing this serious global issue, and the Committee must be sure that the proposed draft has firm prospects of adoption and ratification.

A negative decision would undoubtedly generate major concerns amongst individual countries and ports that are beginning to look towards more stringent local legislation should there be delays to the international legal instrument. A proliferation of local approaches will be difficult for shipping to accommodate. Such a piecemeal, disjointed approach is counter-productive when dealing with a trans-boundary, global industry such as shipping.

The vital need for a uniform and effective international law on ballast water management could not be greater than it is right now – a decision to move forward with the Convention now would be hailed in history as one of the most significant global environmental achievements in the early part of the 21st Century – and a major credit to the vision and efforts of the dedicated members of MEPC.

Andreas Chrysostomou

2nd Inter-sessional Refines Draft Convention

From 3 to 7 March 2003 the MEPC Ballast Water Working Group met under the chairmanship of Mr. Mike Hunter (United Kingdom). This was 16th time the Working Group has convened and the second time that it has done so intersessionally. The need for a second intersessional meeting was approved by the IMO Council, at its 89th session, in recognition of the work required to progress the draft international ballast water Convention in preparation for MEPC 49 in July.

Representatives from 42 countries and observers from 12 organizations attended the meeting. In the opening proceedings, the Director of the IMO Marine Environment Division, Mr. K. Sekimizu, recalled that the Group had met at every session of MEPC since MEPC 35 in 1994, and outlined important milestones in the work towards a global legal instrument on ballast water management, including:

- the inclusion of the issue of ballast water management in Agenda 21 accompanied by the request to IMO: "to consider the adoption of appropriate rules on ballast water discharge to prevent the spread of non-indigenous organisms....";
- the adoption, in response to this request, of two IMO Guidelines on Ballast Water Management (Assembly Resolutions A.774(18) in 1993 and A.868(20) in 1997);
- the establishment of the GloBallast Programme assisting developing countries to implement A.868(20) and prepare for the forthcoming Convention; and
- the acknowledgement in 2002 by the World Summit on Sustainable Development of the need to accelerate the development of measures to address invasive alien species and resulting in the urgent request to IMO to finalize the Ballast Water Convention (WSSD Plan of Implementation, paragraph 34(b)).

Mr. Sekimizu mentioned that there remained only two working weeks (at this session and MEPC 49) before the Diplomatic Conference would be held in early 2004. The Working Group should, therefore, achieve significant progress in resolving outstanding issues in the draft Convention to enable approval by MEPC 49 of the basic documents for consideration at the Diplomatic Conference.

The Working Group made significant progress in filling remaining gaps in the draft Convention. Several texts were prepared and discussed in detail by an overall drafting group, under the lead of the United States, and thereafter reviewed by the Working Group. A range of technical issues were progressed, including further refinement of ballast water treatment standards under regulations E in the draft Convention.

Of particular note, the Working Group replaced the current proposals for a short-term (E-2) and long-term (E-3) standard for Ballast Water Management with a single Ballast Water Performance Standard retained in brackets for further consideration by MEPC 49.

The Working Group recalled that, at MEPC 48, it identified the following issues, in priority order, for guidelines to be developed in support of the draft Convention:

- guidelines for the design, construction and operation of ships that use Ballast Water Exchange;
- guidelines for approval of ballast water treatment systems (type testing);
- guidelines supporting coastal States when considering additional measures under B-3.2 and Section C of the Regulations; and
- guidelines on ballast water sampling and inspections by port State Administrations.

Progress was made in further developing these guidelines.

Overall, the Working Group developed a new consolidated and renumbered text of the draft Convention, and the Secretariat was instructed to submit in a separate document to MEPC 49, changes the Working Group had made to the text of the draft Convention, as compared with the text contained in document MEPC 48/21.

The full report of the 2nd intersessional meeting of the Ballast Water Working Group is contained in MEPC paper MEPC 49/2/3



The 2nd inter-sessional meeting of the IMO Ballast Water Working Group, London 3-7 March 2003 – the 16th time the group has met.

The Proposed Ballast Water Convention – a Major Advance in Marine Environmental Protection



In its approaching 49th meeting the IMO's Marine Environment Protection Committee expects to take a major step to address one of the most significant present-day threats to aquatic species and ecosystems – the introduction of invasive species through the release of ballast water.

The transfer of invasive aquatic species has proven to threaten human health (by the introduction of pathogens) and the environment (by introducing species that compete with, prey upon, interbreed with or simply destroy- endemic species or ecosystems.) They can also interfere with legitimate human use of coastal and marine areas, potentially causing significant socio-economic impacts including impacts on fisheries, tourism and amenity and coastal and aquatic industries and infrastructure, even extending into freshwater courses. Ballast water serves as a significant mechanism for transfer of aquatic organisms from ecosystems to which they are adapted, to those in which they can be harmful and invasive.

Under the current version of the Draft Convention, each Party would be required to take nine actions to "give full and complete effect" to the Convention's provisions

Adoption of the *Draft International Convention for the Control and Management of Ships' Ballast Water and Sediments* is intended to help address the ballast water issue. It focuses on minimising current risks and side effects to the environment and human health arising from the transfer of species in ships' ballast water and sediments, and beginning the process of eliminating such harmful transfers in the future.

International law provides a strong mandate for the adoption of this convention. The UN Convention on the Law of the Sea requires States to work together "to prevent, reduce and control human caused pollution of the marine environment, including the intentional or accidental introduction of harmful or alien species to a particular part of the marine environment." Controls on introduction of alien species that threaten ecosystems are also mandated under the Convention on Biological Diversity, and targeted for action in the Plan of Implementation adopted at the World Summit on Sustainable Development (WSSD) in 2002. The MEPC's action on this topic is further based on direct mandates contained in two resolutions of the IMO Assembly.

Under the current version of the Draft Convention, each Party would be required to take nine actions to "give full and complete effect" to the Convention's provisions:

- require ships under its flag or authority to undertake ballast water management activities ("mechanical, physical, chemical, and biological processes, either singularly or in combination, remove, render harmless, or avoid the uptake or discharge of harmful aquatic organisms and pathogens within Ballast Water and Sediments");
- ensure that all vessels within their jurisdiction comply with those requirements, without different treatment of the vessels of non-parties;
- adopt and apply legal prohibitions and appropriate sanctions, applicable to all of the Party's vessels, regardless of where the violation occurs (based upon reports through IMO);
- ensure the existence of adequate sediment reception facilities (the use of which does not cause undue delay) at ports and terminals where ballast water tanks may be emptied, cleaned or repaired;
- make full information available to the IMO and to other Parties regarding their legal requirements, and the location and availability of reception facilities;
- monitor compliance with ballast water management requirements;
- monitor and maintain records concerning the effects of ballast water management activities;
- encourage the continued development of standards and methods for ballast water management; and
- make scientific and technological developments and monitoring data available to other Parties.

As currently drafted, exemptions would apply to vessels designed in a way that does not enable or require them to carry ballast water, to ballast water discharge that is required to deal with an emergency (not caused by the owner/officer's negligence or recklessness), and to vessels that operate legally and by permission within a single country's jurisdiction. Military and other (non-commercial) government vessels are also exempted. Parties are called upon to ensure that exempted vessels' operations are consistent with ballast water requirements, "so far as reasonable and practicable."

MEPC 49 will decide whether the Parties may declare areas in which ballast-water discharge or uptake may be subject to more significant controls, and how such areas may be designated.

The basic mechanism of implementation is the creation of a "ballast water management plan" for each vessel, including programmes for certification and record-keeping, as well as specific ballast water management practices (pumping, treatment, sediment minimisation, etc.) The planning requirement enables each vessel to adopt the procedures that are most appropriate to its configuration, operations and other factors. The goal of planning and certification will be to meet specific ballast water management standards, and such standards are still under discussion by the Committee.

To enable enforcement of these requirements, the Draft Convention provides that the Parties' officials may board and inspect vessels, and where appropriate to take and test ballast water samples. Where harmful conditions or practices are detected, the inspecting authorities are entitled to "take steps to warn, detain or exclude the ship" until conditions that would threaten health or the environment are remedied.

The Draft Convention recognises regional agreements as a key avenue of practical implementation. As a consequence, it encourages Parties to co-operate in other ways to achieve the Convention's objective including "in a given geographical area to... conclude regional agreements ... for preventing and minimizing the transfer of harmful aquatic organisms and pathogens through ships' Ballast Water." It further imposes a good faith obligation on other Parties to co-operate with such regional agreements, and to develop "harmonized procedures" regarding these regional agreements.

There remain, as noted, a number of issues and concepts to be negotiated in the coming meeting regarding areas where the current draft could be significantly improved. In particular, the document could include stronger language regarding:

- the development and recognition of national legislation;
- a greater focus on preventing the uptake of organisms at ballast water source ports;

- attention to the potential impact of harmful aquatic organisms discharged in areas beyond national jurisdiction (the "high seas"), including near sea-mounts and other biologically important ecosystems; and
- clearer statements of the Parties' obligation to protect against harms where a Party permits an exception, or takes (or refrains from) some other measure, resulting in the introduction of harmful aquatic organisms, even on a one-time basis.

In sum, the Committee is facing a significant and difficult challenge; however, the adoption of an international treaty and relevant standards and commitments for the current control and minimisation of ballast-water-borne organisms, can be a critical and urgent first step in the achievement of WSSD marine targets regarding the loss of marine biodiversity, marine protected areas and ecosystem protection. It would be a significant step in achieving international objectives for the conservation and sustainable use of the world's marine resources.

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Marine Bioinvasions: Patterns, Processes and Perspectives

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China Tackles Problem at Source

The People's Republic of China, the GloBallast Pilot Country for the East Asian region, has been making good progress with a number of technical activities at the Dalian Demonstration Site, including the establishment of a red tide monitoring and reporting system and research and development of alternative ballast water treatment options, specifically biocides, heat treatment and electro-sanitization.

The Port of Dalian is located in the largest bay of the Bohai Sea and is the largest port in north-east China. The port comprises five terminals with a total of 71 berths, 40 of which can accommodate vessels larger than 10,000 gross tonnes, importing and exporting oil, chemicals, containers and general cargo. There were more than 12,000 vessel movements and over 100 million tonnes of cargo handled in 2002.

The area is also extremely important for aquaculture (macro-algae, shellfish, shrimp, sea cucumbers and abalone), and is one of China's main coastal tourism and recreation areas. The Bohai Sea is therefore extremely important for a number of reasons and is particularly vulnerable to aquatic bio-invasions. Harmful algae blooms due to natural seasonal changes have occurred historically in the area, have increased in recent years due to land-sourced marine pollution, and present a particular problem for ballast water operations.

In Ballast Water News No. 5 (April – June 2001) we reported on plans by GloBallast – China to develop and implement a comprehensive red-tide monitoring and communication system, for alerting ships' Captains to areas to be avoided when taking on ballast. Implementation of the system is now well under way, with the following activities having been completed:

- Collection of background information about the port of Dalian, Bohai Sea and the occurrence, biology, ecology and impacts of harmful algae blooms in the area.
- Establishment of a red-tide reporting phone number ('hot line').
- Production and broad distribution of a comprehensive information leaflet about red tides, their impacts and the 'hot line' system.
- Provision of training to the Liaoning Maritime Safety Administration (MSA), shipping industry, port authorities, environmental agencies, seafarers, fishermen and related workers on red tides and their impacts, measures for identifying red tides, methods for collecting seawater/red tide samples and reporting procedures. As a result a broad network of volunteers from the coastal and marine community has been established, forming the 'eyes and ears' of the system.

- Provision of more formal training to personnel from both the MSA and National Oceanic Environmental Monitoring Centre to undertake more structured, routine, regular sampling at set areas on a weekly basis, commencing each June when warmer waters stimulate red tide blooms.

Additional components of the system currently under development include:

- Designing a red tide information table in both English and Chinese, including the location of the tide/area to be avoided, the species present, its potentially harmful effects and measures to avoid uptake and transfer.
- Establishing a procedure for providing red tide alerts to ships via the existing NAVTEX shore-ship communication system, shipping agents and web site.
- Soliciting feedback from ships and other partners in the system.

This excellent initiative by China is important in that it seeks to prevent the uptake of harmful organisms by ships at the ballast water source area. This approach is far more effective than trying to 'treat' organisms once they are inside ballast tanks, or trying to 'manage' the problem at the ultimate discharge port. Prevention is of-course always better than cure, and environmental problems are always much more effectively addressed as close to their source as possible. Unfortunately, to date most efforts to address the ballast water problem have focussed on shipboard and point-of-discharge measures. As currently drafted, even the IMO ballast water Convention is dominated by this less effective approach.

China is to be commended for acting to prevent harmful algae from being exported from its seas in ships' ballast water, thus helping to protect the marine environments of its trading partners. Hopefully, this will serve as a model for all ports and countries that export ballast water, and help promote a shift towards addressing the ballast water problem at its source, including through relevant improvements to the draft IMO Convention.

SR





NIMPIS on the Net

The Australian National Introduced Marine Pest Information System (NIMPIS) is a web accessible database developed by the Centre for Research on Introduced Marine Pests (CRIMP) at CSIRO Marine Research in Hobart. It was funded by Environment Australia through the National Heritage Trust. The database was developed in conjunction with a similar system at the Smithsonian Environmental Research Centre (SERC) in the USA.

The website links to a database full of information on over 80 of the known introduced species in Australian waters and also contains some information on species that are yet to be found there.

NIMPIS was developed for all those that are interested in, or likely to encounter, marine species not native to Australian waters (such as researchers, environmental managers, students and non-specialists).

It allows national and regional managers to access information relevant to introduced marine species in their local areas, learn what actions and activities are occurring in other regions, and also to input information to add to the overall knowledge base for each species.

The database acts as the national archive for distributional information on marine pests in Australia, provided directly by the States and Northern Territory, so that the fundamental survey information is not lost.

NIMPIS provides an online, convenient mechanism for members of the public or marine stakeholders to report unusual occurrences that may be a new record of an introduced marine species to the relevant State agencies, with a copy being sent to CRIMP.

NIMPIS is also being used to store and update the biological information on marine pests collected from Australia's ongoing national survey of ports, so that the AQIS ballast water Decision Support System can be kept up to date.

While developing NIMPIS has been a major achievement and a lot of dedicated work in itself, maintaining its currency over the long-term could be an even larger task. The database already has over 600 images and 10,000 references documented, and new information becomes available on daily basis.

Please visit NIMPIS at: <http://crimp.marine.csiro.au/nimpis>

Any comments are welcome (<mailto:nimpis@csiro.au>)



Sample outputs from NIMPIS for a particular species - *Gymnodinium catenatum*

GloBallast Holds Two Major Workshops

In April this year GloBallast convened two major international workshops in Brazil, on two very topical issues relating to ships ballast water and the management of invasive aquatic species. Initiated and organized by the GloBallast Programme Coordination Unit (PCU), with support from Brazil, Australia, New Zealand and others, the "1st International Workshop on Guidelines and Standards for Ballast Water Sampling" was held in Rio de Janeiro from 7 to 11 April and the "1st International Workshop on Guidelines and Standards for Invasive Aquatic Species Surveys and Monitoring" was held in Arrail do Cabo from 13 to 17 April.

Ballast Water Sampling Workshop



Workshop delegates in Rio de Janeiro

In developing the draft International Convention for the Management and Control of Ships' Ballast Water and Sediments, the Marine Environment Protection Committee (MEPC), through the Ballast Water Working Group (BWWG), has identified ballast water sampling as an important technical issue that needs to be addressed in the Convention. MEPC has instructed the BWWG to develop the necessary technical guidelines, in support of the Convention, on ballast water sampling. Ballast water sampling may be carried out for a number of useful purposes, including:

- To better understand the physics, chemistry and biology of ballast water (scientific research).
- To identify potentially harmful species carried in ballast water (hazard identification /risk assessment).
- To assess compliance with open-ocean ballast water exchange requirements (compliance monitoring and enforcement).
- To assess the effectiveness of alternative ballast water treatment methods (ballast water treatment R&D / effectiveness testing).

Ballast water sampling equipment and methods have been in a phase of development in recent years, with different countries and parties around the world trialing different approaches, and a number of documents relevant to ballast water sampling are now available. These include, *inter alia*:

- A practical manual on ballast water sampling published by the Cawthron Institute in New Zealand in 1997.
- A review of ballast water sampling methods published by the Centre for Research on Introduced Marine Pests (CRIMP) in Australia in 1998.
- An international calibration exercise for ballast water sampling conducted under the EU Concerted Action Programme in 1999.

In addition, one of the many areas in which the GloBallast Programme is providing technical assistance to developing countries, is the sampling of ships' ballast water. In order to assist both the GloBallast Pilot Countries and the MEPC-BWWG with this issue, GloBallast convened the ballast water sampling workshop in Rio de Janeiro in April.

The workshop was attended by three 'trainees' from each GloBallast Pilot Country, a number of additional delegates from the host-country Brazil, including ballast water sampling experts, and both trainees and experts from a number of other countries. In total, there were 42 participants from 20 countries.

The workshop proceeded according to a five-day programme, and involved presentation of background papers by international experts, outlining ballast water sampling activities undertaken by various entities around the world, and allowing discussion and debate comparing methods and results. Time was also dedicated to classroom demonstrations and hands-on familiarisation of different types of ballast water sampling equipment.

On the 3rd day a practical demonstration of the various types of sampling methods and equipment was undertaken aboard a tanker that was most generously made available by the Brazilian Navy, at the Nitiroi Naval Base in Rio de Janeiro. Types of sampling equipment demonstrated included various plankton nets, water samplers and pumps.



Shipboard practical demonstration of BW sampling



The shipboard sampling was followed up with analysis of samples and identification of biota in the laboratory.

The remaining days of the workshop were spent in four working groups, 'brain-storming' a set of prescribed questions and tasks, in order to develop the structure and key components for the draft Guidelines and Standards.

The workshop generated the following outputs:

- A *Workshop Report* containing papers presented and outlining workshop results and recommendations for further action.
- The structure and main items for inclusion in draft *International Guidelines and Standards for Ballast Water Sampling*, for consideration by MEPC (MEPC paper 49/INF.35).
- *Trained personnel* from each of the GloBallast Pilot Countries who can plan and commence ballast water sampling programmes on return to their countries, according to international standards.

The full report of the workshop will be available at <http://globallast.imo.org/publications>

IAS Surveys and Monitoring Workshop



Workshop delegates in Arraial do Cabo

The best way to address the problem of the transfer of invasive aquatic species (IAS) in ballast water is to prevent the uptake of organisms at the source port. This approach is consistent with modern principles of best-practice environmental management, where efforts are directed at preventing rather than curing environmental problems, and to addressing them as close to the source as possible, rather than at the 'end-of-the-pipe.' Given the complexities and constraints of ship-board treatment and management, avoiding the uptake of harmful organisms in the first place, is a much more effective and efficient approach.

It is not possible to manage and control invasive aquatic species (IAS) unless you know *what they are* and *where they are*. Both A.868(20) (sections 8.2.2 and 10) and the draft Convention (Regulation C-2) recommend that port States should undertake biological surveys and monitoring

in their ports, and alert shipping and other interested parties to 'outbreaks' of harmful aquatic organisms and areas or times to be avoided in taking on ballast. This can help to minimise the uptake and transfer of organisms. The results of such surveys and monitoring are also vital for the control and containment of any IAS that are detected in the port and to understanding impacts and invasion processes.

It is highly desirable that IAS surveys are conducted according to standardised, uniform methods. This helps to ensure quality control and a basic minimum standard, and allow inter-comparability of data. Such standardisation is extremely important when dealing with global activities such as shipping and the transboundary movement of species, which requires a high level of international cooperation and coordination.

During the development of the new IMO ballast water Convention, a need has been identified for international guidelines and standards for surveys and monitoring of invasive aquatic species in ports and coastal areas. The Australian Centre for Research on Introduced Marine Pests (CRIMP) developed standard IAS survey protocols in 1996. These have been well tried and tested, with 34 Australian ports surveyed since 1996. The protocols were revised and republished in 2001 (Hewitt & Martin 2001).

As part of its objective of assisting developing countries to implement the IMO Guidelines and prepare for the new Convention, the GloBallast Programme is supporting each of its six Pilot Countries to conduct biological baseline surveys and ongoing monitoring programmes for IAS.

In 2001 GloBallast selected the CRIMP Protocols for application at its six Demonstration Sites, on a trial basis. This included a training programme to establish national IAS survey teams, and the provision of technical advice, assistance and funds to design and conduct baseline surveys. By the end of 2001 all six Pilot Countries had completed field sampling. Sample identification, data analysis and reporting are underway.

The CRIMP Protocols have also been adopted/adapted for UK ports and the New Zealand Ministry of Fisheries for a comprehensive series of surveys around NZ. They are also being applied at locations in the US, and considered for use by groups in the Baltic, Mediterranean and East Asian Seas.

In order to assist both the GloBallast Pilot Countries and the MEPC-BWWG with this issue, GloBallast convened the IAS surveys and monitoring workshop in Arraial do Cabo in April.

The workshop was attended by port survey experts from each GloBallast Pilot Country, a number of additional delegates from the host-country Brazil and experts from a number of other countries. In total, there were nearly 40 participants from 20 countries.

The workshop proceeded according to a five-day programme, and involved presentation of background papers by international experts, outlining IAS survey and monitoring activities undertaken by various entities around the world, and allowing discussion and debate comparing methods and results.

On the 3rd day a field trip was undertaken to Cabo Frio Island, a marine reserve, scientific research site, aquaculture site and an area that is experiencing marine bio-invasions. The remaining days of the workshop were spent in working groups, 'brain-storming' a set of prescribed questions and tasks, in order to develop the structure and key components for the draft *International Guidelines and Standards for Surveys & Monitoring of Invasive Aquatic Species in Port Areas*. A desk-top exercise to develop an IAS survey and monitoring plan for Arraial do Cabo bay was also carried out.



Cabo Frio island – threatened by invasive species



One of the working groups preparing an IAS Survey and Monitoring plan for the area.

Important recommendations included the need for greater capacity building in the area of marine taxonomy and systematics, and the need for a global network of linked IAS databases and information systems. The full report of the workshop will be available at <http://globallast.imo.org/publications>

Acknowledgements

Sponsors and supporters of the workshops included the Global Environment Facility (GEF), Federal Ministry of Environment (Brazil), Brazil National Health Surveillance Agency (ANVISA), Brazilian Navy, Directorate of Ports & Coasts, IEAPM Marine Institute, Rio de Janeiro Port Authority, Brazil National School of Tropical Botany, Aliança Navegação e Logística Ltd, International Marine Paints, Sindicato Nacional das Empresas de Navegação Marítima, Transpetro S.A, CSIRO-CRIMP (Australia), Queensland Fisheries Service (Australia), Ministry of Fisheries (NZ), Cawthron Institute (NZ).

BW Training Course Validated

Another major GloBallast event held in Brazil during the reporting period was the course validation workshop for the standard, modular training course developed by the programme called "Ballast Water Management - an Introductory Course". The workshop was held in Rio de Janeiro from 12 to 16 May 2003.

Training is an essential component of implementing both port-based and shipboard ballast water management arrangements. Until now, there has not been a standardised, international curricula or model course relating to IMO ballast water requirements.

In undertaking this task, GloBallast has adopted the UN Train-X methodology, which derives its success from its focus on the careful analysis of training needs and learner

characteristics, the development of course materials using both specialist course developers and subject matter experts, followed by delivery through performance-based instruction and a process of validation and continuous improvement.

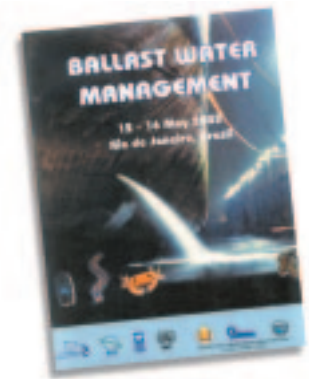
The UN Train-Sea-Coast (TSC) programme was engaged to coordinate development of the training package, with the TSC Centre in Brazil developing the actual course materials, assisted by a team of both Brazilian and international experts.

The course was attended by 20 participants from different backgrounds, mainly at the operative rather than policy/decision making level, and the content and structure is intended to provide a general introduction to the issue only.

The course received very positive comments from participants and observers and is considered a timely contribution to the issue worldwide. For the specific case of Brazil, observers consider the course quite adequate to be delivered in other Latin American countries. The Trainees Guide provides material of excellent quality, although a major revision is needed for the Instructors Guide, which consequently affects planned delivery.

A second validation exercise will now be held in another GloBallast Pilot Country, and further improvements made, including in relation to developments with the IMO Convention, before the modular training package can be made available on a more global basis.

GloBallast would like to especially acknowledge the support of UN Train-Sea-Coast and various players in Brazil for their contributions to this major initiative.



*Students' manual
Cover image: S Gollasch*

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Keep Pests Out of Paradise



The IUCN World Congress on Protected Areas, or the World Parks Congress as it has become known, is a 10-year event that provides the major forum for setting the global agenda for Protected Areas, nature reserves, national parks and the like. The Congress offers a unique opportunity to take stock of Protected Areas and biodiversity management, provide an honest appraisal of progress, and chart the global course for Protected Areas for the next decade and beyond.

The 5th IUCN World Parks Congress (WPC) will be held in Durban, South Africa from 8th to 17th September 2003. The theme of the Congress responds to the challenge to show how Protected Areas are relevant to the broader economic, social and environmental agenda for humankind in the 21st Century, and the importance of such areas in adapting to global change, with the theme "Benefits Beyond Boundaries".

Seven workshop Streams will be conducted over three days during the Congress. One of them, *Maintaining protected areas for now and the future: management effectiveness*, will address threats to Protected Areas and the necessary adaptive management. This will include a special day-long session on invasive alien species.

It is acknowledged that invasive species are one of the major threats to biological diversity worldwide and examples of invasives causing damage to high value Protected Areas are numerous in terrestrial, freshwater and marine environments. Invasive species have become a major concern for Protected Areas and agencies are now integrating invasive species work into Protected Area management. For example, next year the US National Oceanic and Atmospheric Administration (NOAA) has requested significant additional funding to establish a nationally coordinated monitoring system for invasive aquatic species focusing on Marine Protected Areas (MPAs).

Another example is the "Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness" produced by the IUCN World Commission on Protected Areas (WCPA) marine group, the World Wide Fund for Nature (WWF) and NOAA. This guidebook includes indicators of management effectiveness relating to invasive aquatic species.

While MPAs, which are usually discrete geographical areas defined by lines on maps, are widely recognised as an extremely useful tool for protecting marine biodiversity and for assisting the sustainable use of marine resources, they also suffer from certain limitations when it comes to

addressing invasive aquatic species. These limitations relate to the fact that the marine environment is a continuous, fluid, inter-connected medium and the fact that invasive aquatic species may not respect 'artificial' MPA boundaries drawn by humans. Many MPAs around the world are located immediately adjacent to major ports and shipping lanes, and in some cases may actually host ports and/or shipping lanes with their boundaries. One stark example is the world's largest MPA, the Great Barrier Reef, which is also a World Heritage Area and IMO Particularly Sensitive Sea Area (PSSA).



Major ports and shipping routes within and adjacent to the Great Barrier Reef Marine Park (source: Qld Govt)

Even if there are no major ports or shipping activities within an MPA itself, MPAs, especially those with multipurposes, are often used for recreation, tourism and even fishing. The small craft that visit MPAs for these purposes may be vectors of secondary introductions of alien species, which were first introduced at larger ports where the small vessels are based.

Protecting MPAs from invasive aquatic species in the borderless marine environment is a major challenge. While MPAs clearly generate benefits beyond their boundaries, they are also highly vulnerable to impacts from activities both within and beyond these boundaries. Effective management of MPAs must therefore take a holistic, cross-boundary approach. The invasive species workshop at WPC 2003 will seek to develop innovative recommendations for how MPAs and other Protected Areas might best be protected from invasive alien species, considering integrated, eco-system based management principles.

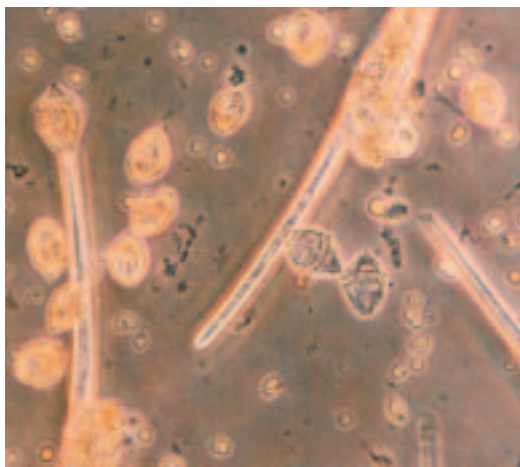
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Progress Report

Activities Undertaken April - June 2003

- ✓ Held 1st International Workshop on Standards and Guidelines for Ballast Water Sampling, Rio de Janeiro, Brazil 7-11 April.
- ✓ Held 1st International Workshop on Standards and Guidelines for Invasive Aquatic Species Surveys and Monitoring, Arraial do Cabo, Brazil 13-17 April.
- ✓ Presented at Port of Gothenburg seminar, Sweden 24 April.
- ✓ Prepared papers for MEPC 49.
- ✓ Prepared draft outline for International Standards and Guidelines for Ballast Water Sampling.
- ✓ Held ballast water training package validation workshop, Rio de Janeiro, Brazil 12 – 16 May.
- ✓ Progressed finalisation of reports on Port Biological Baseline Surveys – 6 Pilot Countries.
- ✓ Finalised programme and organizational arrangements for 2nd International Ballast Water Treatment R&D Symposium, London 21-13 July.
- ✓ Attended and presented at 12 International AIS Conference, Windsor, Canada 9-12 June (GloBallast delegates from India and I.R. Iran).
- ✓ Attended and presented at National Invasive Species Workshop, Spain 4-7 June.
- ✓ Attended and presented at International Workshop on High Seas Governance, Cairns, Australia 16-20 June.
- ✓ Progressed arrangements for 1st International Ballast Water Risk Assessment Workshop, Melbourne, Australia, 1-5 September.
- ✓ Produced 13th issue of Ballast Water News.



Activities Planned July - September 2003

- Attend MEPC 49 14 to 18 July.
- Convene 2nd International Ballast Water Treatment R&D Symposium, IMO London 21-23 July.
- Update / republish Global Ballast Water Treatment R&D Directory
- PCU staff annual leave
- Hold Regional Task Force meeting for Black Sea 6-8 August
- Attend and present at Invasive Species Workshop during the 5th World Parks Congress, Durban 8 to 17 September.
- Hold 1st International Ballast Water Risk Assessment Workshop, Melbourne 22- 26 September.
- Finalise validation of modular ballast water management training course.
- Initiate regional replication and cooperation activities for South America, and progress same in other regions.
- Progress drafting of international guidelines and standards for both ballast water sampling and IAS surveys and monitoring in port areas.
- Progress production of final reports on the Pilot Country Port Biological Baseline Surveys, Ballast Water Risk Assessments, Case Studies and other technical activities.
- Plan and organize 5th Global Task Force meeting, including review of proposed amendments to Pilot Country workplans.
- Progress proposals for follow-up activities to the GloBallast Pilot Phase.
- Produce 14th issue of Ballast Water News.



More Information?

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