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ECSA Bulletin

Bulletin of the Estuarine & Coastal Sciences Association

MIKATA COAST, JAPAN

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Cover photograph: Jean-Paul Ducrotoy

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with thanks to all contributors.

Editorial

I have now been with ECSA for thirty years and since my beginning within the Association I have witnessed and taken part in many discussions in the Council about the need for new development strategies and for actions to bring in more members. As will be seen in this issue of the Bulletin, the pressure is now also coming from members themselves who think it is time for a re-shuffle of the organisation. It is true that the re-branding of EBSA (Estuarine and Brackish-water Sciences Association) into the present ECSA was rather painless and that the new format (at that time) has been well accepted by members and the scientific community in general. Later on, in the 1990s, attempts were, for example, made to change ECSA into EECSA (which would have transformed ECSA into a European ECSA), other ones to introduce the concept of management in adding an M into the acronym (but where?) or even proposals were made to make it "global" in its remit and administration, which it has been for many years anyhow. The name is still there, the administrative framework has changed little but the organisation has evolved slowly but gradually over the years. So, is there really a need for rethinking the philosophy, aims and objectives of the association and redefining its remit?

I think this is now unavoidable as creeping changes are about anyway. ECSA has been twinned to its sister-organisation in the USA: ERF recently re-branded "Coastal and Estuarine" CERF, making both twins even more similar. In 2012, ECSA 50 (a symbolic number for a Conference), to be held in Venice (Italy), is driven by a private company, the publisher Elsevier. Will that be a one-off, or is this a model for the future? The world around us has changed profoundly and new challenges are awaiting us. Collaborating with the industry is one of them. A move in the aims and objectives might be needed in relation to a review of the philosophy behind the day by day functioning. The membership remains steady (after some ups and downs...), but it is more and more difficult to find dedicated people who give their time and expertise for 'free' to the Association. Should we change what is the moral foundation of a non-profit charity? How can the association be more involved with businesses and keep its independence?

New ideas and concepts are needed to make the Association evolve smoothly. In this issue, you will find a new column "Letters to the editor" with proposals and ideas for action. This column is open to you, readers, and some of you have already put pen to paper as you will witness. The Bulletin is yours. As the rest of the Association, it also needs to adapt to new demands and constraints (one being financial). Please tell us what you expect the Bulletin to provide to you in the future. How should it complement the e-newsletter? How could it help rethinking the whole ECSA organisation? Your comments and proposals will be more than welcome. As editor, I will do my best to integrate the need for change in a new structure for the Bulletin, which, I trust, will meet identified new requirements.

Jean-Paul A. Ducrotoy
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Photo: J-P Ducrotoy

Membranoptera alata

The Evil Twin

I am writing this in June for the summer 2011 issue of the ECSA Bulletin and my hope is that you will receive it before the northern hemisphere summer ends. I regret that the winter 2010 Bulletin did not reach you until the end of spring – a delay caused by problems experienced by our art-work producers at that time. This was resolved only when we moved to our new art-work producers and I am looking forward to working with them on this and future issues of the Bulletin.

Looking back to the beginning of this year, I was very pleased to learn that a colleague of mine at the Plymouth Marine Laboratory (PML), Dr. Carol Turley, was awarded an OBE (Officer of the Order of the British Empire) as part of the UK's New Year Honours List for 2011. These honours are awarded by the Queen to exceptional people - in Carol's case for her services to science. Carol was my Head-of-Group for several years at PML, where she led the 'Restricted Exchange Environments' programme. She still retains a strong interest in estuaries and coastal waters, especially in their pH variability, although the award was for her untiring efforts in promoting concerns for, and research into, ocean acidification – often referred to as 'the other CO2 problem' or, more emotively, global warming's 'equally evil twin'. The 'evil twin' sobriquet reflects the fact that the carbonate chemistry of the oceans, including their pH, has been essentially constant for hundreds of thousands of years, whereas since the start of the industrial revolution the oceans have taken up about a third of the human-produced CO2, forming carbonic acid in seawater and lowering surface pH. This rapid rate of change in carbonate chemistry poses a serious threat within just decades, especially if carbon dioxide emissions continue at the same rate, not only to marine organisms, including those that use carbonate ions to make their shells and skeletons, but also to food webs and ecosystems. For those of you with young children who already show an interest in the future of their environment, you may be interested to guide them to the informative ocean-acidification video link at YouTube:

http://www.youtube.com/watch?v=55D8TGRsl4k/

Several other ocean-acidification videos can be viewed at YouTube, including the PML video 'Ocean acidification: Connecting science, industry, policy and public':

http://www.youtube.com/user/PMLAdministrator?feature=mhee

Acidification of the seas caused by increasing carbon dioxide emissions, together with pollution, fertiliser run-off from farming, and overfishing, all combine to provide a severe threat to marine ecosystems. In fact, according to a report from the International Programme on the State of the Ocean (IPSO), there is a 'high risk of entering a phase of extinction of marine species unprecedented in human history':

http://www.stateoftheocean.org/ipso-2011-workshop-summary.cfm

This report also states that, according to scientific research, hypoxia and anoxia, warming and acidification, are factors present in every mass extinction event in the oceans over the Earth's history. About 55 million years ago, as much as half of some species of deep-sea creatures were wiped out when atmospheric changes created similar conditions. In addition, the flow of soil nutrients into the oceans is creating dead zones where anoxia and hypoxia result in fish and other marine life being unable to survive. According to the report, overfishing is exerting an intolerable pressure on ecosystems already under attack by the effects of acidification and warming and other largely man-made ocean problems, and is such that 63% of the assessed fish stocks worldwide are over-exploited or depleted and over half of them require further reduction of fishing in order to recover. Another startling statistic repeated in the report is that record high temperatures during 1998 wiped out about 16% of the world's tropical coral reefs. Further, millions of fish, birds and other forms of life are choked or suffer internal ruptures from ingesting plastic waste and pollutants, including flame-retardant chemicals and detergents, which are absorbed into particles of plastic waste in the sea and then ingested by marine creatures.

The increasing frequency of 'natural' disasters that are affecting the world during the so-called 'Anthropocene' may in part reflect the extent to which we are altering our global environment, most obviously in the emissions of carbon dioxide. Since winter 2010 the world has experienced a number of 'natural' disasters, including the torrential rainstorms that triggered mudslides in Brazil and produced the worst natural disaster in that country's history, the Australian floods in Queensland and the severe floods of Sri Lanka, the Philippines and South Africa, as well as the severe tornadoes of the southern USA.

Even the truly nature-induced disasters can have horrific human-induced knock-on effects, as in the case of the earthquake and associated tsunami that washed over coastal areas of northeast Japan, which although natural in themselves led to elevated radionuclide radiation levels in the vicinity of the Fukushima Daiichi nuclear power plant. The 40-year old power plant was seriously damaged during the earthquake and tsunami, which caused explosions and unacceptably high levels of radiation in the local environment. It is interesting to note that at this time the UK government is pushing ahead with plans for new nuclear power plants, viewed by some as the 'evil' energy option for curbing carbon emissions in the short term, although, of course, unlike Fukushima, the UK and northern Europe, as well as much of eastern and western Europe, are located far from tectonic plate boundaries where major earthquakes occur. The photographic images taken during Japan's awful day in March 2011 are staggering – pine trees and houses that were partially submerged by the tsunami in Natori; submerged runways at Sendai airport; and the spectacle of a large ferry boat precariously perched

on top of a building in Iwate prefecture. As an aside, the 2004 earthquake and 10m-high tsunami that occurred in Indonesia demonstrated the importance of mangroves to coastal protection (doi:10.1126/science.1118387); this article gave an assessment of coastlines after the tsunami and indicated that coastal vegetation such as mangroves and beach forests helped to provide protection and reduce effects on adjacent communities. It also stated that mangroves and other coastal vegetation have been cleared or degraded along many coastlines in recent years, increasing their vulnerability to storm and tsunami damage, and that establishing or strengthening vegetation belts of mangroves and other coastal forests may play a key role in reducing the effect of future extreme events.

Returning to this summer, I am often surprised by the 'explosion' of jellyfish that can suddenly occur in the Mediterranean during summer months and which are often a nuisance to beach-loving holidaymakers. Off Cabo de Gata, Southern Spain, staff of the local government of Almeria have released turtles (loggerheads, or 'tortugas bobas' in Spanish – 'daft turtles') into the sea in recent years because of their consumption of jellyfish (in addition to a diet of crabs, prawns, sea urchins, fish, fish eggs and even seaweed). However, these jellyfish may be more than an annoying and apparently increasing hazard. Recent published research indicates major shifts in microbial structure and function associated with jellyfish blooms and a large detour of carbon away from higher trophic levels and towards bacterial carbon dioxide production (doi:10.1073/pnas.1015782108) thereby, one presumes, elevating CO2 levels in the environment.

There is some good news this summer, certainly for the UK. Testing of bathing waters for the UK showed that 97% of the 596 coastal sites monitored met the minimum EU standards and 82% complied with the more stringent guidelines, which currently places the UK in ninth place out of 30 European countries, e.g.:

http://www.eea.europa.eu/publications/quality-of-bathing-water-2010

So, whether you have in mind lazing, walking, swimming, snorkelling, kayaking or some other water-sport activity as you head for the beach, my wishes to you for a happy and jellyfish-free experience and for an enjoyable summer!

Dr Reg Uncles
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Photo: Reg Uncles

Cabo de Gata Natural Park, Spain

ECSA Workshop **Macronutrients**

Planned for June/July 2012 at the University of Plymouth

This 3-day workshop will focus on practical techniques for the analysis of nitrogen and phosphorus, including the organic fractions, and will also involve contextual presentations from internationally-recognised researchers. The Biogeochemistry Research Centre at the University of Plymouth has extensive experience in the analysis of N and P, and operates a suite of ISO accredited (9001:2001) instrumentation. It is envisaged that the worshop will be suitable for researchers at all levels who wish to develop their practical skills and understanding of aquatic nutrient cycling and analysis.

If you are interested in attending this workshop then please e-mail **Dr Mark Fitzsimons (m.fitzsimons@plymouth.ac.uk)** to register your interest.

A Time for Change

Dear Editor,

Ten years ago ECSA was considering how it should be responding, as an organisation, to the challenges at the turn of the century. Ten years on... do we need to do more?

At the time, all those years ago, I commented on how the actual challenge of estuarine/coastal science is to juxtapose itself within the wider landscape of political and economic concerns. I argued that failure to address issues within a wider context has, historically, worked to marginalise the potential outcomes of sound scientific endeavour.

Today, the world is in a different place; we have several planet-wide challenges of which climate change tends to be the one on everyone's lips these days. The others include: ocean acidification, stratospheric ozone depletion, global phosphorus and nitrogen cycles, biodiversity loss, global freshwater use, land-system change, aerosol loading and chemical pollution. We could also mention population and dwindling resources (dwindling due to real or geo-political constraints). Much of the above sits comfortably (perhaps uncomfortably) within the realm of ECSA.

There is little doubt that the complexities of the interconnected slow and fast processes and feedbacks in the Earth System provide humanity with a challenging paradox. On the one hand, these dynamics underpin the resilience that enables planet Earth to stay within a state conducive to human development. On the other hand, they lull us into a false sense of security because incremental change can lead to the unexpected crossing of thresholds that drive the Earth System, or significant subsystems, abruptly into states deleterious or even catastrophic to human well-being.

Ten years ago, I believed that ECSA needed to be re-aligned. Ten years on this is an imperative if ECSA is to have any real impact on the key issues of the day. Of course, ECSA can continue doing what it does, traditionally, and has excelled in – estuarine and coastal science. It can continue to be a focus for excellence in that branch of science.

But I believe that re-branding ECSA fundamentally would reflect the growing awareness that just paying attention to the science will be (and, indeed, has been) insufficient. An example: you wouldn't think we would still have a problem with sewage. But we do. The science was sorted sometime ago, but delivery of the arguments has been woefully inadequate because the issue is about priorities. Whilst a clean sea is like sunshine and green fields – a Good Thing – it is not a real priority in the real world of decision-making, economic outcomes and social concerns. Only when the arguments for a clean sea address the social and economic realities will the science be in context and thus give an opportunity for serious improvement.

The State of the Environment of England and Wales: Coasts of, wait for it, 1999 summed the situation nicely – the Environment Agency identified seven priorities for action; sea level change, bathing water quality, habitat loss, fisheries decline, pollution by hazardous substances, development control and need for better understanding.

Most of these issues have been recognised for decades. Therein lies the problem – we do need a different model in order to effect change.

I believe ECSA, suitably re-branded, has a key role to play in developing that model and effecting that change – by re-casting the context of estuarine and coastal science so that it becomes truly effective within a sustainability context.

Richard Pagett
11 June 2011

ECSA Annual General Meeting 2010

Minutes of the 39th Annual General Meeting

The 39th Annual General Meeting of ECSA was held at 12.30 hrs at the Foresight Centre, University of Liverpool on Wednesday 14th April 2010.

Present: M. Elliott, J. Wilson, R. Uncles, M. Wilkinson, P. Jones, M. Fitzsimons, A. Wither, D. McLusky,

1. **Apologies for absence:** V. de Jonge, A. Miller, J-P Ducrotoy, R. Duck, T. Fernandes, C. Scanlan, A. Lyndon, C. Taylor, A. Basset, A. Franco, S. Mitchell.
2. **Minutes of the Previous AGM**
   The minutes of the 38th AGM 2009 were read and approved, with the addition of the names of the new members.
3. **Matters Arising**
   There were no matters arising.
4. **Report of the Honorary Secretary**
   In his Report, the Hon. Secretary sketched out the various initiatives in which the Council were engaged, emphasising their efforts in reversing the decline in membership and pointing to a welcome uptake of Institutional and Sponsoring Membership. ECSA gratefully acknowledged their support. He went on to say that the Association's meetings continued to be in demand and welcomed the recent re-instatement of the UK local meetings. Electronic communication continued to grow in importance and prominence, and the Secretary urged all members to be pro-active in consulting, and amending and up-dating the website. There had been considerable change over the year in ECSA publications, with changes in Editor of ECSS, Editor of the Bulletin, and the Publications Secretary himself. On behalf of the Council, the Secretary formally thanked John Pomfret for his many years of service, and likewise acknowledged the efforts put into ECSS, which reflected well on ECSA itself, by D. McLusky. The Secretary closed his remarks with thanks to all the others, and especially the members of Council, who had contributed to the success of the Association over the past year.
5. **Report of Honorary Treasurer**
   The Hon Treasurer presented his Report which was very straightforward. Members' were asked to note that subscription income had increased slightly over the previous year, and investment income had held up remarkably well under the current economic circumstances. Annual expenditure was slightly under income, and there were few points to consider. He noted a small decline in Council expenses, and reiterated the guidelines about minimising costs. The Treasurer drew attention to the large subscription income which had been derived in the past from (C)ERF associates and reinforced the Secretary's remarks about encouraging this if only as a unilateral gesture to start with.
6. **Applications for Membership**
   As the list could not be presented to the meeting, the AGM agreed to give the Secretary to approve this at his discretion.
7. **Election of President**
   R. Uncles was proposed by J. Wilson and seconded by M. Wilkinson and elected nem con.
8. **Elections to Council**
   Kate Spencer (proposed M. Elliott, seconded J. Wilson)
   João Carlos Marques (proposed V. de Jonge, seconded J. Wilson)
   John Pomfret (proposed R. Uncles, seconded M. Elliott)
   Victor de Jonge (proposed R. Uncles, seconded J. Wilson)
   All elected nem con.
9. **Election of Honorary Auditors**
   A. Lydon was proposed by M. Wilkinson, seconded by J. Wilson and elected with approval. The AGM noted that the turnover of the Association was below the threshold for an auditor.
10. **Any Other Business**
    There being no other business, the Meeting closed at 13.40.

Secretary's Report 2011

This is the last Report that I shall give as Secretary to ECSA Council, so I would like to take the chance not just to summarise the Association's business over the past year, but also to say something of the changes over my time as Secretary.

Looking back over the years, a constant theme has been one of change, although more lately the tone had been more of one of consolidation. When I took over, ECSA had just started a round of new initiatives, including updating and straightening out the membership list, a new web-site, a twice-yearly Bulletin in colour, and of course the system of sub-committees amongst whom the various responsibilities and duties would be divided and who would report back to Council. I am pleased to be able to report that this last year has seen advances, and hopefully long-term improvements in all these areas.

Membership is still a concern, as the numbers of ECSA members is still down on what it once was. However, the last year has seem some improvement in the numbers, and, thanks to the efforts of the Membership Treasurer, Clare Scanlan and other individuals on Council, we are starting to re-build Institutional and Sponsoring Membership. This gives long-term stability to ECSA's membership income stream as well as affirming ECSA's commitment to a broad and all-inclusive church.

The Treasurer's Report will be presented shortly, and it is I suppose some testament to his skill and economy that the expenditures by ECSA are little different from what they were then. I will leave the rest of the detail to the Treasurer.

There is little doubt that the global (and local) economic situation will be a problem we have to face, not just in terms of our income, but also in terms of attracting new members, with jobs in all fields and countries both scarce and temporary. It will be a challenge for the future to show what advantage may be had from membership of, or even better, participation in, ECSA and to continue this recruitment drive.
I have already mentioned the Bulletin, which under the Editorship of J-P. Ducrotoy, has gone back to publishing the Abstracts from ECSA meetings. Many felt that this had been a very valuable function, preserving knowledge which might otherwise have been lost or overlooked, and of course the Bulletins are now starting to be made available via the web for all to research. Hopefully in the near future we will have the complete set available there. Increasingly, it is through the electronic media where the first inquiries are made, so the website, thanks to the efforts of Karen Nicholson is vital. I would urge all members to scan it regularly and send updates/corrections etc to her. Mention should be made here also of our new Electronic Newsletter which, thanks to Anita Franco is developing into a regular and timely source of news and information. All the Association's outlets need to be kept informed and given the material to put out, so again I would ask all members to send material – news, information, updates, articles, photographs and so on – to the various editors, or to the Secretary, who, as I can testify personally, will be only to glad to pass it on!

Regretfully, CUP has decided to end the Association's association with the Linnean Society Synopses, and the plans to re-issue the Handbooks, again a fairly regular item in the Secretary's Report, have been advancing at a snail's pace due to the increasing work commitments of those involved. A couple of bright spots, however, were the ECSS editorship, with Elsevier accepting ECSA's nomination of Mike Elliott, and also ECSA's involvement in Elsevier's Treatise though the Senior Editorship of Donald McLusky.

One constant throughout the years has been the demand for ECSA as conference organiser, partner or sponsor. This has continued and is increasingly international in character, although Council has debated the demands it puts on not just the Conference Coordinator, who is due a great deal of thanks for the time and effort he has put into this, but also on Council and indeed the rest of the ECSA membership for attendance.

Into this category of external communication should come the relationship of ECSA to other organisations, and not just scientific societies. Council has spent a great deal of time debating the merits and the nature of links to CERF, our sister organisation in the US, and also to other initiatives such as MARS or MARBEF+. Arising from this has been ECSA's decision to sign up to the Venice Platform, as an umbrella organisation to which a variety of others (including MARS above) are likewise affiliated, and other initiatives including SEDNET are being investigated.

Finally, I should just like to say that I hope that prolongation of this year's Report on to a second page is a testament to the increasing volume of activities undertaken on your behalf by the Association, rather than to any increasing verbosity on mine. Whatever, the reason, I am delighted to be able to hand over to a very able successor, whose election at this AGM I heartily recommend to you, and I am confident that he will get the same degree of support and encouragement from the rest of Council that I enjoyed, so that he can continue the advances and improvements which I hope have been a feature of past reports.

ECSA Travel and Research Facilitating Grants:
An Invitation for Applications

I would like to take this opportunity to remind members that ECSA will consider making small grants available to research workers and students for the following purposes (please note that we cannot consider applications for other purposes and that the ECSA Grant Scheme for new applications is likely to change after the 1 November 2011 awards have been allocated):

A1 Travel to participate in academic meetings with personal presentation of the results of their research.

A2 Travel to engage in research relevant to their project and to collect material/ information by:

(i) Visits to libraries or other collections of research materials to supplement research already undertaken

(ii) Visits to laboratories

(iii) Fieldwork

ECSA may also make grants available for the following purposes:

B1 Participation in an academic meeting without presentation of their research

B2 Participation in a training course or workshop

B3 Scientific consumables and minor equipment

Category B will be given support only if funds are available after the payment of category A awards.

Rules and Regulations

a) Applications will be considered on the 1st April and the 1st November each year. Applications should be sent to the Hon. Secretary, ECSA1.

b) Applicants must confirm that support is unavailable from other sources.

c) Category A applicants will be granted not more than 85% of allowable costs; Category B applicants will be granted not more than 50% of allowable costs;

d) The total sum any one applicant may receive is £500.

e) Allowable costs are

1) basic travel
2) registration fees
3) accommodation (five nights maximum)
4) consumables and minor equipment

f) Proof of travel etc. and a copy of all receipts must be provided to ECSA no later than 6 months after the date. The applicant must submit a one page report to the Editor of the Bulletin describing the achievements. Reimbursement will be following receipt of claim form and Bulletin article.

g) Applicants will not normally be eligible for more than one award.

All grants are subject to availability of funds and an application form can be downloaded at **www.ecsa-news.org** for completion. Please send the completed form to:

Dr. Mark Fitzsimons, University of Plymouth, Plymouth PL4 8AA, UK

We look forward to receiving your applications

Dr Reg Uncles
ECSA President

Photo: J-P Ducrotoy

Mikata Coast, Japan

50th ECSA Conference 2012: Today's science for tomorrow's Management

CALL FOR ABSTRACTS! Deadline: 13 January 2012

Following the success of the renowned ECSA conferences and workshops, the 50th ECSA Conference **Disputed Issues in Coastal Science and Management** will cover the fundamental natural and social sciences for estuaries, coasts and marine areas and emphasis the links to the integrated and sustainable management of these areas.

Themes:

The themes of the conference will be:

- Ecosystem structure and functioning
- Anthropogenic change
- Valuing ecosystems
- Systems analysis
- Ecosystem services and societal benefits
- 'Future-proofing the science'

Invited Speakers include:

Steve Blaber, CSIRO Marine and Atmospheric Research, Australia
Zhongyuan Chen, East China Normal University, China
Omar Defeo, Marine Science Unit, Uruguay
Michel Meybeck, Université Pierre et Marie Curie, Paris
Nancy N. Rabalais, Louisiana Universities Marine Consortium, USA
Boris Worm, Dalhousie University, Canada

The conference will include:

- Presentations from leading specialists on all aspects of estuarine and coastal marine science, as well as on the application of science for conservation and environmental management
- An opportunity to catch up on new state of the art techniques and gain an understanding of about other marine, coastal and transitional systems worldwide
- A poster forum for unveiling new research ideas and concepts
- Networking opportunities with an interdisciplinary group - including researchers from all fields related to estuarine and coastal marine science

For general queries, please contact: **Conference Secretariat** Email : Customerservice-ECSA12@elsevier.co

Forthcoming International Meetings

2012

ECSA Symposium 50
An ECSA – Elsevier joint venture
Theme: "to be announced shortly"
Venice, Italy
June 2012

2012

ECSA Symposium 51
Theme: "to be announced shortly"
Shanghai, China
April 2012
Organiser: Professor Dr Yunxuan Zhou zhouyx@sklec.ecnu.edu.cn

2012

ECSA Symposium 52
Theme: Centred around 'management of transitional waters'
Klaipeda, Lithuania
September 2012
Organiser: Arturas Razinkovas, Coastal Research and Planning Institute, Vilnius, Lithuania - art@corpi.ku.lt

Theme:

"Estuarine and Lagoon Ecosystem Trajectories"

CEMAGREF, Bordeaux (France)
24-28 October 2011

http://www.ecsa-bordeaux2011.fr
contact@ecsa-bordeaux2011.fr

Throughout the world, estuaries and lagoons are among the most intensely modified and threatened aquatic ecosystems. Moreover, these systems are vulnerable to the consequences of global change.
From a management point of view, there is a tremendous and concrete lack of knowledge regarding the functioning of estuarine ecosystems and the socio-economic relations that bind the various actors to these environments.

In that context, suitable management, governance and restoration approaches should address both ecological and societal aspects. Medium and long term investigations seem to be suitable to draw the ecosystem trajectories and to explore in an useful way their prospective evolution under different scenarios. This leads to a situation where we may question the concept of « Good Ecological Status/ GES » and « Good Ecological Potential/ GEP ». As estuaries and lagoons are irreversibly affected by human activity, the good ecological status becomes mainly a societal choice, asking the question « Which nature do we want for tomorrow ? »

Apart from tools, models and methodologies to assess ecosystem trajectories, example of management for preservation, restoration and compensation measures are welcome.

This ECSA symposium will contribute to provide sound science on past and future estuarine and lagoon ecosystem evolution. A special session will be dedicated to the concept of good ecological status (GES) in the context of the Water Framework Directive.

Topics

<http://www.ecsa-bordeaux2011.fr/topics.htm>

1- **Preservation, Rehabilitation and Restoration of ecosystems** <http://www.ecsa-bordeaux2011.fr/topics.htm#1>
2- **What is « Good ecological status » and « Good ecological potential »** ?
<http://www.ecsa-bordeaux2011.fr/topics.htm#2>
3- **Methods, Tools and Models for ecosystem monitoring and evolution analysis**
<http://www.ecsa-bordeaux2011.fr/topics.htm#3>
4- **Ecosystem trajectories, prospective scenarios and adaptation**
<http://www.ecsa-bordeaux2011.fr/topics.htm#4>
5 - **WISER** <http://www.ecsa-bordeaux2011.fr/topics.htm#5>

We would like to take the opportunity of this symposium to strengthen the transdisciplinary links between Life Science and Human Science on each of the above-mentioned topics.

Contact : Mario Lepage, IDPE
Ingénieur en Ecologie aquatique
Unité Ecosystèmes Estuariens et Poissons Migrateurs Amphihalins Cemagref Groupement de Bordeaux
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http://www.ecsa-bordeaux2011.fr

Estuarine, coastal and oceanic ecosystems: breaking down the boundaries

14th African Marine Science Symposium ECSA 49

The international ECSA Symposium at Rhodes University, Grahamstown, South Africa

Scientific Committee:

Professor Alan Whitfield (South African Institute for Aquatic Biodiversity)
Professor William Froneman (Rhodes University, South Africa)
Dr Isabelle Ansorge (University of Cape Town, South Africa)
Professor Mike Elliot (University of Hull)
Professor Victor de Jonge (University of Hull)
Dr Reg Uncles (Plymouth Marine Laboratory)

Symposium sponsors:

The SAMSS/ECSA organising committee would like to acknowledge the generosity of the following organisations that contributed towards the reducing of the symposium fees and student prizes:

South African Institute for Aquatic Biodiversity (SAIAB)

Rhodes University (RU)

National Research Foundation (NRF)

South African Network for Coastal and Oceanographic Research (SANCOR)

Prizes for best student oral and posters are sponsored by SANCOR

The venue

Grahamstown is roughly 700 km from the place where the "Two Oceans meet" (see photograph of Cape of Good Hope by Victor de Jonge) and where you can find the only penguin species that does not live in Antarctica (photo: Victor de Jonge)

The ice breaker on the Sunday before the symposium was very enjoyable with live music, drinks and snacks in a large comfortable tent just outside the conference hall.

OVERALL PROGRAMME

	SUNDAY 3RD	MONDAY 4TH			TUESDAY 5TH			WEDNESDAY 6TH		THURSDAY 7TH	
		PLENARY - BADAT			PLENARY			PLENARY		PLENARY	
		ESTUARIES	LARGE MARINE ECOSYSTEMS	EDUCATION, RESEARCH & MANAGEMENT	ESTUARIES	MARINE & COASTAL MANAGEMENT	DEITS & FOOD WEBS	BIOTIC RESPONSES TO ABIOTIC DRIVERS	FISHERIES MANAGEMENT	BIODIVERSITY	MARICULTURE
		TEA / COFFEE									
		ESTUARIES	LARGE MARINE ECOSYSTEMS	EDUCATION, RESEARCH & MANAGEMENT	TOP PREDATORS IN MARINE ECOSYSTEMS	MARINE & COASTAL MANAGEMENT	DEITS & FOOD WEBS	BIOTIC RESPONSES TO ABIOTIC DRIVERS	FISHERIES MANAGEMENT	BIODIVERSITY	
		LUNCH									
	REGISTRATION	BIOGEOCHEM IN MARINE ECOSYSTEMS	METHODS FOR MONITORING ECOSYSTEMS		TOP PREDATORS IN MARINE ECOSYSTEMS	GLOBAL CHANGE	ECOSYSTEM STRUCTURE & FUNCTION	GENETICS & PHYLO-GEOGRAPHY	FISHERIES MANAGEMENT		
		TEA / COFFEE									
		BIOGEOCHEM IN MARINE ECOSYSTEMS	METHODS FOR MONITORING ECOSYSTEMS		INVASION BIOLOGY	GLOBAL CHANGE		GLOBAL CHANGE	FISHERIES MANAGEMENT		
		POSTER SESSION									
	COCKTAIL FUNCTION	FREE EVENING			THEMED DINNER			GALA DINNER			

The main programme on the Monday morning started with an in-depth and philosophical speech by Dr S Badat (Vice Chancellor, Rhodes University, Grahamstown). The closing session was undertaken by the local organisers, who thanked their support team and presented gifts to them and to the invited, plenary speakers.

Due to the very high number of participants, the symposium programme was divided into three parallel sessions comprising 15 minute oral presentations. There were 120 oral presentations and 130 poster presentations. The number of scientists involved in the program was about 550.

The content of the program was rich and varied (see above overview). A number of very challenging, scientifically good and sometimes provocative talks were given. The full list of abstracts (oral and poster) can be found on the ECSA website under Conferences & Workshops, 2011 events.

There was plenty of time for contacts during the meeting and especially during the very enjoyable evening meals that we usually collectively had in the big tent, with enjoyable and entertaining groups of musicians (musician photo: Angel Borja).

Victor N. de Jonge (Conference Coordinator)

ECClima – Managing estuaries in a Changing Climate

The "ECClima congress – estuaries in a changing climate" took place between the 4th and the 9th of April 2011 in Porto, Portugal, organized by CIIMAR within the EEA funded project "Managing effects of global climate on estuarine biodiversity and productivity". The congress was initially meant to be a meeting of the project partners and collaborators where the seven PhD students and their supervisors would present results and conclusions. By becoming an international congress, the door was open to all scientific community and stakeholders.

The congress included several thematic sessions which were opened by invited experts on each subject. Carlo Heip, NIOZ' (Netherlands) director, opened the congress presenting a talk on climate change impacts on estuaries and coastal areas which was further enriched with a presentation from Henk van der Veer, also from NIOZ (Netherlands), on long term changes in a fish community, and a presentation from Audrey J. Geffen, from Bergen University (Norway), on historical information collected from cod otholits. A session dedicated to trophic interactions and modeling, started with Torstein Pedersen, from Tromso University (Norway), and Agostinho Antunes, from CIIMAR (Portugal), in another session focused on the role of genetics in the adaptation to environmental changes. Finally Donald Boesch, from Maryland University (USA), launched discussion on coastal zone management.

Presentations came from diverse locations and it felt great to have such a fantastic group of people discussing a broad range of species and processes under the umbrella of climate change! Temperature was the most scrutinized factor and object of two types of approach: comparisons along a latitudinal gradient to represent a temperature gradient, and temporal comparisons based on long-term data series and projections. Along presentations speakers exposed their findings on the influence of temperature and other climate change related factors on species distribution, physiology and behavior. Furthermore, a special issue of the Journal of Sea Research will include selected manuscripts and is expected by mid 2012.

The Minho Estuary, North of Portugal, was the center of most contributions from the project members. And what could be better for a "field trip" than going there and enjoy the beautiful scenario? The boat trip was so pleasant and relaxing that someone took the chance to recharge her batteries...

Sérgia Costa-Dias & Joana Campos

Where is the Clyde estuary?

A recent court case concerning shipping on the Clyde has highlighted several aspects of the legal definition of an estuary in the U.K. The case was an appeal case between Western Ferries (Clyde) Limited and The Commissioners for Her Majesty's Revenue and Customs (HMRC) concerning liability to pay corporation tax. Western Ferries, who operate a car-ferry service between McInroy's Point (near Gourock) and Hunter's Quay (near Dunoon), asserted that they should be taxed under the "Tonnage tax regulations", whereas HMRC asserted that they should be taxed under "Corporation tax regulations". At stake was the sum of approximately £3 million.

In order to qualify for the lesser Tonnage tax, Western Ferries had to show that they operated qualifying ships certified for navigation at sea, that the crossing was not within an estuary, and that the crossing was not within a harbour. The submissions made in the case and the written judgement (First-Tier Tribunal: Western Ferries (Clyde) Ltd v. HMRC) published in April 2011 provide, perhaps for the first time in Britain, a legal basis for the definition of an estuary.

The various definitions of an estuary both scientific and legal are listed as "findings of fact in relation to the estuary issue" as paragraphs 98 -124 in the written judgment. It is acknowledged that the stretch of water for the Western Ferries crossing is fully saline. The estuary definitions include the common scientific definition of "an estuary is a semi-enclosed coastal body of water which has a free connection with the open sea and within which sea water is measurable diluted with fresh water derived from land drainage" as well as a number of definitions from sources such as the Mariner's Handbook. Descriptions of the Clyde estuary are given from the Proceedings of the Royal Society of Edinburgh (1986). The limits of the Clyde estuary as defined for the Urban Waste Water Treatment Directive, the Water Framework Directive (implemented as the Water Environment and Water Services (Scotland) Act 2004), the Habitats Directive and other conservation legislation (SSSI and SPA) are all given. All these sources describe the limits of the Clyde estuary as being from Glasgow down to Greenock or Gourock, with some placing the seaward limit at a line from Greenock to Craigendoran, and others placing the seaward limit at a line from Gourock to Kilcreggan. With all such definitions the Western Ferries crossing is seaward of the estuary's outer limits.

In contrast, Clydeport Operations Ltd took the view that the estuary ended at the limit of their jurisdiction at a line from the Mull of Kintyre to Corsewall Point and that the Clyde estuary included all of what is otherwise known as the Firth of Clyde. Additional evidence was submitted that the word "firth" is "an essentially Scottish word with no precise meaning. The Pentland Firth is a strait, the Firth of Forth, the Firth of Tay and Solway Firth are seaward extensions of estuaries, and the Firth of Lorne is comparable to a fjord."

In the judge's deliberations on the estuary issue (paragraphs 184 – 203 of the written judgement) he considers all the evidence submitted. In paragraph 194 he refers to a previous judgement (R v Scy of State for the Environment) regarding the outer limits of the Humber and Severn estuaries and from that notes that salinity and topography were relevant considerations. In paragraph 195 the judgment states: "While these (i.e. salinity and topography) may not be the only relevant considerations, they do seem to be, on the material presented to us, the principal matters which repeatedly feature on the discussion of the boundaries of and the definition of an estuary"
The judgement refers to the consistent approach of the International Hydrographic Dictionary, the Mariner's Handbook, the scientific literature, the Water Framework Directive and the Urban Waste Water Treatment Directive and their implementing regulations, all of which refer to the meeting of saline waters and fresh waters. In paragraph 197 the judgement concludes "Overall our assessment is that the burden of evidence, which we accept, points to the seaward end of the estuary being at or about the Tail of the Bank or to put it more broadly in the vicinity of Greenock.... Seaward of this area the water is entirely or almost entirely saline... Accordingly the ferry crossing does not lie to any extent with the Clyde estuary."

The judgement also concluded that the ferry crossing was not within a harbour, and decided this issue in favour of the Appellant (Western Ferries)

The judgement however found against the Appellant with regard to the certification of the ships. It was determined that the certification of the ships contained significant restrictions and limitations. Accordingly the ships were not certified for "navigation at sea", and on that basis were not eligible to pay Tonnage Tax. Despite "winning" their case with regard to the estuary and harbour issue, the Appellants "lost" their case due to the certification issue.

The judgement does provide clear information and guidance on the seaward limits of an estuary which has now established a precedent in U.K. law, and which may prove to be of assistance in any other future disputes in Britain. Within Scotland, the case has also clearly highlighted that the terms firth and estuary are not interchangeable, and that attempts to conflate the two terms are erroneous.

The full judgement
(Appeal number SC/3071/2009: First-Tier Tribunal: Western Ferries (Clyde) Ltd v. HMRC) runs to 56 pages and is available online at:
http://www.financeandtaxtribunals.gov.uk/Aspx/view.aspx?id=5475
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Donald McLusky

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Photo: Reg Uncles

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Publisher's Note

E. Wolanski, I. Valiela, M. Elliott Dr Donald S McLusky – an appreciation and thanks from ECSS

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Photo: Reg Uncles 2002

Boscastle Harbour entrance, Cornwall, UK

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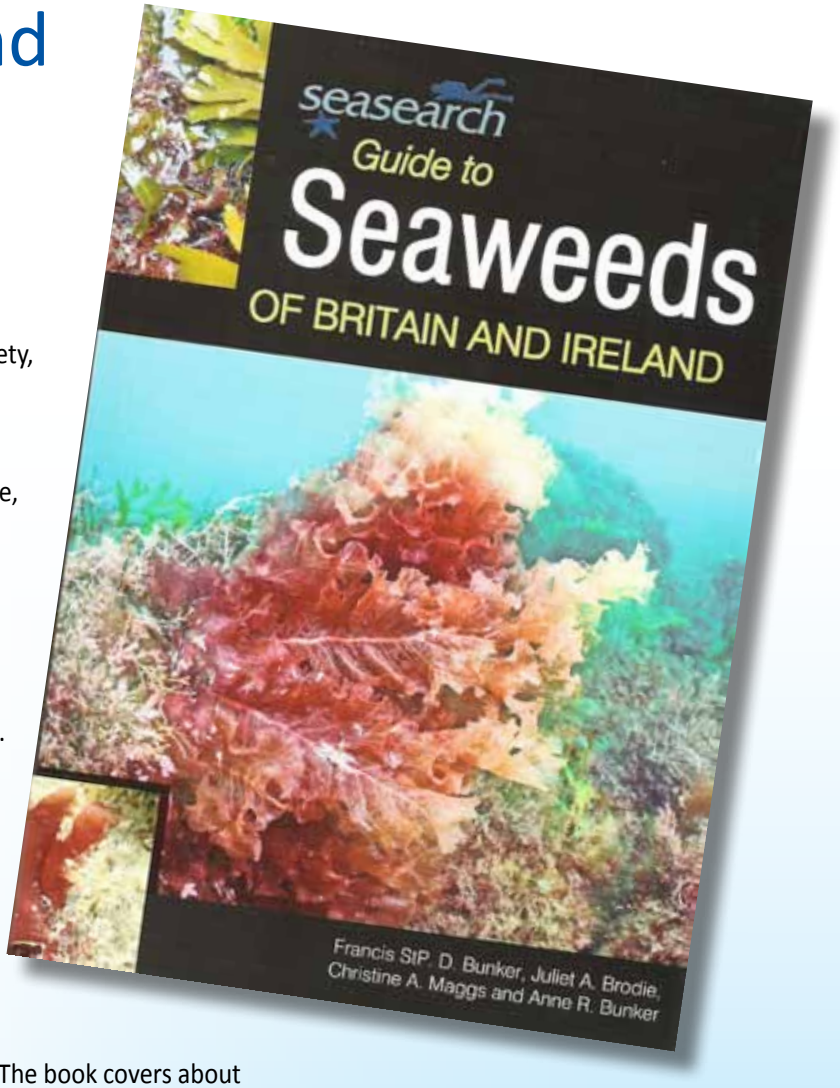
Scarborough, England

Seasearch Guide to Seaweeds of Britain and Ireland



Francis StP. D. Bunker, Juliet A. Brodie, Christine A. Maggs, and Anne R. Bunker

240pp., Published in 2010 by the Marine Conservation Society, Ross on Wye, England

Available from the Marine Conservation Society, www.mcsuk.org , or Unit 3, Wolf Business Park, Ross on Wye, HR9 5NB, UK at £14.50 plus £2.40 post and packing.

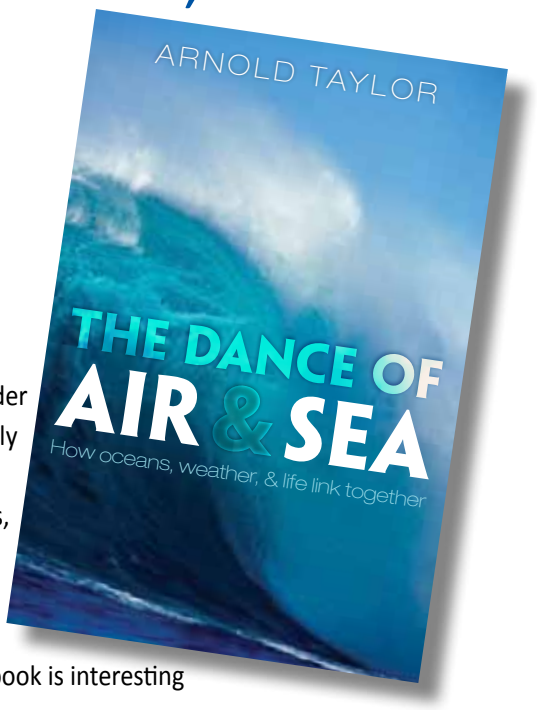
Martin Wilkinson

This is an eagerly awaited book which has not disappointed. Some have a mistaken belief that seaweed identification is difficult. This book capitalises on the huge collection of photographs of seaweeds of Francis Bunker (see also Francis' own website of seaweed pictures www.weedseen.co.uk) to present about 220 British seaweeds, many common but some rare, both intertidal and sublittoral, in an easily useable format that is intended to make many of them easily identifiable, even in the field. The book covers about 146 taxa of red seaweeds, 54 of browns and 24 of greens. Most are given as species but some that might be difficult for the non-specialist are not omitted but given as genera or forms.

For each species there are one or more high quality photographs which really capture the feel of the plant so aiding good identification. However this is not just a picture book. The authors are experts at seaweed identification and this shows through in the quality of the detailed comment and description. In addition to the pictures, each species has a description which includes important features, such as texture, but particularly each species has possible identity confusions listed and explained. They tackle the distinction between species in such genera as Porphyra, Ceramium and Polysiphonia, and in some crustose forms, that would certainly not be tackled in a simple seashore picture book. The book includes common names, a well as Latin ones, although a strange quirk is that the authors have invented common names where there were none known, giving some weird and wonderful names. Helpfully a distribution map around the British Isles is provided for each species, which also rates the commonness or rarity of each species. Another quirk is that the size of each species is shown in relation to a silhouette of a person. While this is fine for larger species it is odd for the microscopic ones. These oddities should not be seen to detract from the overall high quality of the book.

The book also contains some introductory guidance on collecting and finding seaweeds and on technicalities such as reproduction and life-histories. This is not an academic text but is academically detailed and correct while being user friendly. It is an excellent book which can be heartily recommended for purchase for both intertidal and sublittoral surveys.

The Dance of Air and Sea: How Oceans, Weather, and Life Link Together



Arnold H. Taylor
Oxford University Press (2011)
288pp

Dr A.R.D. Stebbing*

The book is a worthy achievement by Arnold Taylor, who has made accessible to the reader one of the more enigmatic problems in environmental science. The author has confidently straddled three disparate disciplines from oceanography to meteorology and ecology. He traces the passage of 'signals' from the ocean, through one or more weather patterns, ultimately to have a significant effect on biological populations. The problem is the more intractable because cause and effect are separated by long distances and time intervals. It is a fascinating problem that takes the reader to improbable places as the author weaves into the text amusing anecdotes, historic bon mot, and scientific curios. So the book is interesting to read on more than one level.

The book is well-structured in taking the reader through the environmental and disciplinary compartments. Inevitably the links are sometimes tenuous - this is an inherent part of the problem - where the reader encounters oscillations, 'seesaws', and signals divorced from affects in space and time. Correlations analysis applied to the environment does not pin down causality with the rigour of laboratory experiment. Simulation models are the modern tool of choice and yield fascinating results when used experimentally. The Rocky Mountains create a large southerly meander in the track of weather systems, but when Richard Seager and colleagues 'removed' the Rockys, they found that temperature difference between Newfoundland and Britain was reduced by about 9 degrees centigrade.

The author tells us from Sydney Levitus and his colleagues' work that over 80% of the heat from the greenhouse affect, the so-called 'Missing Heat', is now known to be in the oceans. Actually the oceans provide an important heat sink that has deferred rising air temperatures. Without the oceans acting as a buffer, the consequences of climate change would already be much greater. To date, with a temperature rise of over 0.5 degrees centigrade in the North Atlantic, what effect might be expected to the NAO with future forecast increases in temperature?

The author's own relatively 'simple' NAO model, with output given in Figure 7.2, shows forecast behaviour beyond the data. Recent data corroborates model output beyond that illustrated, and gives confidence in the model. A longer forecast to the end of the century is given in Figure 10.2. While models that do not work are instructive, those that do are uplifting, as an accurate prediction provides what science is expected to do.

Given such an interdisciplinary tour de force, the reader feels some sympathy for the author as he accepts in the Epilogue that the positioning of the Gulf Stream remains elusive, and the behaviour of the plankton, enigmatic. I am reminded of Peter Medewar's descriptor of research as 'The Art of the Soluble'. The author returns inevitably to the need for more and better data, to 'monitor ecosystems as fully as possible'. There is no limit to the modellers' appetite for new data to which the only long term answer is satellite remote sensing. But then the author would have to part company with the longest running marine biological data set in existence.

Having shared in the gestation of Arnold Taylor's book for many months over pub lunches, I congratulate him on the outcome, and hope there will be more books to follow.

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Mobile no: .....

Email address: .....

SUBSCRIPTION RATES (for one year):

Category of Membership	Yearly payment by Banker's (Standing) Order	Yearly payment by all other means
Member	£30	£31
Student member	£10	£11
Institutional member	£100	
Sponsoring member	£250	

Please tick method of payment

❑ Credit card ❑ Standing order*

❑ Cheque** ❑ Bank transfer***

* For payment details please contact the Membership Treasurer or refer to the website
** Cheques should be made payable to: Estuarine and Coastal Sciences Association
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For credit card payment please complete the following:

Please charge to my VISA / MASTERCARD (delete as applicable)

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Signature: .....

Name, as it appears on card: .....

Card expires: ...../.....

IBAN No. GB86 BOFS 8002 2400 3730 53 **BIC: BOFSGB21216**

Applicant's signature: .....

Date of application: .....

Estuarine and Coastal Sciences Association (ECSA)

The Estuarine and Coastal Sciences Association (ECSA) is a direct continuation of the Estuarine and Brackish Water Sciences Association (EBSA). The association was founded in 1971, and is the major European focus for the communication of research and scholarship in estuarine science. Membership is open to all who are interested in estuarine and coastal marine science, whether in Europe or further afield. The association holds local meetings, where work relevant to one specific estuary or coastal site is presented, and international symposia, where work applicable to a chosen theme of estuarine and coastal science is presented. Many of the symposia have been published. The association has caused to be published Handbooks of Methodology for estuarine studies, and Synopses of the British and European fauna, which are available to members at reduced rates. The association has an associated journal, *Estuarine and Coastal Shelf Science*, which is available at greatly reduced rates to members.
The *ECSA Bulletin* is distributed to all members, free of charge, twice a year; this is supplemented by newsletters and association information and links are updated regularly on the ECSA website. The association has a small grants scheme for younger scientists.

Further details and memberships forms from:

ECSA Membership Treasurer,
Dr Clare Scanlan,
Scottish Environment Protection Agency (SEPA),
Inverdee House,
Aberdeen AB11 9QA, Scotland, UK

or from the ECSA website:

www.ecsa-news.org/joiningECSA.htm