




EMBRACING ESTUARIES

Management of Natura 2000 Sites in Estuaries and Sea Ports
Workshop: 15 – 16 September 2016, Hamburg, Germany



Conference Proceedings



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Welcome!

“Embracing Estuaries – Management of Natura 2000 sites in Estuaries and Sea Ports”, a two-day workshop taking place on 15 and 16 September 2016, will be a vital part of the Biogeographical Process of the Atlantic Region. The workshop’s main goal is to encourage dialogue between scientists, practitioners and policymakers, and to encourage their collaboration on the challenges of managing Natura 2000 sites and implementing management plans in estuaries and sea ports.

A transnational challenge – implementing Natura 2000 management plans in European Atlantic Estuaries and Sea Ports

This networking event is aimed at experts from EU Member States from the Atlantic Biogeographical Region, as well as representatives from the European Commission and cooperating institutions. The Elbe Habitat Foundation welcomes attendees involved with or interested in any topic related to estuarine management, such as representatives from port authorities, water management bodies, coastal management bodies, environmental organisations, local/regional governments, etc. The objective is to identify ideas, best practice examples, challenges and solutions regarding four main topics:

Natura 2000 Management Plans – Integrated Approaches & Implementation *Facing challenges and learning from experiences*

In Session I, six internationally renowned speakers will share their experiences in implementing Natura 2000 management plans in various European estuaries. The main questions include: How have the interests of third parties been integrated into Natura 2000 management plans? What measures have been effective, and why? Which obstacles have or had to be overcome to achieve the management plans’ objectives? Are there gaps between management plans’ goals and the day-to-day reality of practical experience? And what kind of challenges in estuarine management lie ahead? Following the presentations, all attendees will be invited to discuss the speakers’ ideas, proposals and further questions in small groups.

Habitat Restoration

Practical examples: restoring European estuarine habitats

In Session II, “Habitat Restoration”, three speakers will present examples of restoration projects in European estuaries. Case studies will show ideas, experiences and achievements in restoring natural habitats and requirements for the future. Following the presentations, attendees will be invited to discuss specific questions in small groups.

Legal Issues

Getting it right: European legislation, challenges and contradictions

The legal framework for estuary regulation is set. Still, there are a lot of issues that need to be discussed: How can practitioners draw the line between mitigation and compensation and how can they, in practice, react to the particular challenge of Article 6(4) of the Habitat Directive (HD)? How can “temporary nature” be created in accordance with the HD? How can a favourable conservation status be achieved in estuaries with major shipping lanes? These and other questions will be presented or discussed in working groups following the presentations.

Communication

Getting through to the public: Do you speak “Estuarine”?

In the fourth session, “Communication”, three expert speakers will provide valuable insight into communication concepts and participation efforts. What methods or models of



cooperation and communication among stakeholders exist? How do you effectively communicate measures for implementing management plans to the public, and raise awareness? How do you get key stakeholders to buy into the plan? Which strategies for explaining complex matters have been successful, and which strategies have failed, been counterproductive or simply less effective? Finally, how can experts and participants of the Biogeographical Process be encouraged to continue exchanging their experiences? This session will also be followed by discussions in small groups.

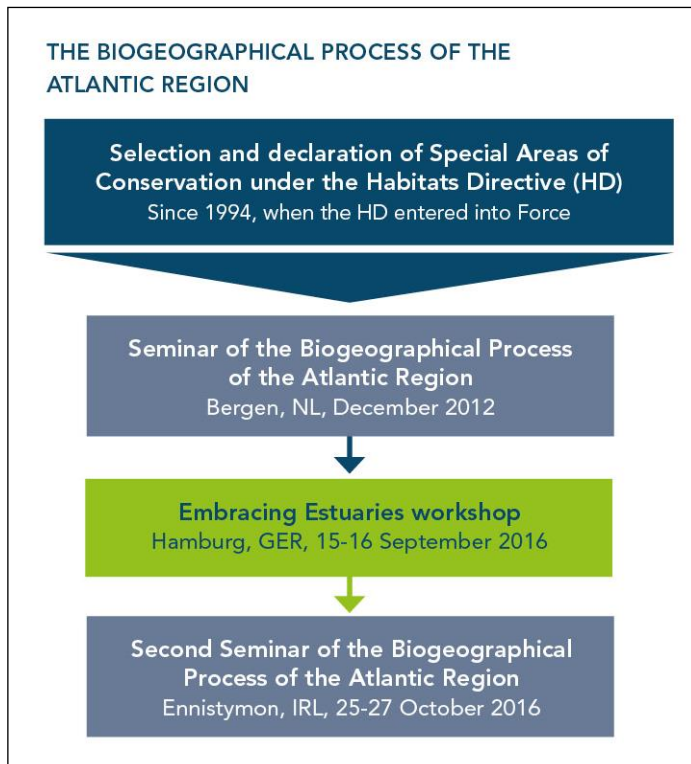
Complementing the Programme – Meet the Elbe Estuary

In addition to keynote speeches and discussions, attendees will be given the opportunity to experience the wonder of the Elbe estuary first-hand on a field trip to Heuckenlock Nature Reserve and to the Kreetsand project on Thursday, 15 September. Both sites are located in the heart of the inner estuary, on the Elbe island of Hamburg-Wilhelmsburg. They are both part of the Natura 2000 network.

Heuckenlock Nature Reserve features a tidal alluvial forest, tidal creeks and freshwater mudflats. It also hosts the Elbe water dropwort (*Oenanthe conioides*), an endemic plant threatened with extinction and listed in Annex IV HD.

In Kreetsand, a habitat restoration project is being implemented: a dyke was realigned in order to create tidal habitats such as shallow water zones and freshwater mudflats. This project is listed in the Natura 2000 management plan of the Elbe estuary and also serves as a compensation measure. Buses will take participants to these sites. Participants must register for the field trip beforehand.

Where we stand – Keeping Track of the Atlantic Biogeographical Process



The “Embracing Estuaries” workshop is part of the international Atlantic Biogeographical Process, launched at an international seminar in December 2012 that took place in Bergen, the Netherlands. Around 80 representatives from all Member States were asked to propose specific recommendations for improving the conservation status of priority target habitats and to initiate cross-border activities. Since Germany was leading the working group on estuaries, its representatives offered to host a networking event on Natura 2000 estuary management planning. The Elbe Habitat Foundation is organising the Embracing Estuaries event on their behalf.

The Elbe Habitat Foundation – a successful alliance for the Elbe

The Elbe Habitat Foundation, which had been created shortly beforehand by the Hamburg Parliament, started its work in 2011, Hamburg's year as European Green Capital. Parliament's aim was to secure the future of the Elbe habitat by providing financial resources for ecological improvements. By establishing an independent foundation, a new chapter was written concerning collaboration within the region: for example, Parliament endowed the Elbe Habitat Foundation with a Foundation Board of Trustees with equal representation – environmental associations on one side, and representatives from the city, industry and the port on the other. Stakeholders who could not be more different, but who were connected to the habitat and economic area of the Elbe like no other, were to collaborate in common projects. The foundation became the nucleus of understanding for the Tidal Elbe River. The foundation has now hit its stride: meanwhile, it has initiated or completed some 50 projects – evidence of excellent cooperation in a spirit of mutual trust. In keeping with this success, the foundation funds will be increased: so far, the foundation has received 4 per cent of the port fees annually to fund its projects; this figure will increase to 5 per cent in the future.

Part of this funding is earmarked for the estuary partnership, which is close to Hamburg's heart. By also including stakeholders from the two neighbouring federal states, dialogue on the Tidal Elbe River will be placed on an even broader footing.

Programme

Day I **Thursday, 15 September 2016**

09:45 **Check-In & Info-Market: Warming Up and Networking**

10:30 **Opening**

State Secretary Michael Pollmann (Hamburg Ministry of Environment and Energy)

Dr. Elisabeth Klocke (Elbe Habitat Foundation)

Setting the Scene

10:55 François Kremer (EU-Commission)

11:10 Christina Müller (Federal Agency for Nature Conservation)

11:25 Beatrice Claus (WWF Germany)

11:35 Dr. Kirsten Wolfstein (Hamburg Port Authority)

**Session I (Part I): Natura 2000 Management Plans
Integrated Approaches & Implementation**

11:50 Christian Michalczyk (Hamburg Ministry of Environment and Energy)

12:05 Peter Symens (Natuurpunt)

12:20 Marjan Datema (Ministry of Economic Affairs, NL)

12:35 **Canapés / Hot and Cold Beverages**

**Session I (Part II): Natura 2000 Management Plans
Integrated Approaches & Implementation**

13:30 Nolwenn Briand & Maïwenn Barret-Marhic (Regional Direction for Environment, Land Planning and Housing Policies of Normandy)

13:45 Tania Davey (Humber Nature Partnership)

14:00 Prof. Patrick Meire (University of Antwerp)

14:15 Discussion

14:30 **Working-Groups (Session I)**

7 small groups work on different questions Results and ideas will be collected and then presented within the "Sharing" on day 2

15:15 **Coffee Break and Poster Session**

16:00 **Field Trips**

Kreetsand: Manfred Meine (Hamburg Port Authority)

Heuckenlock: Dr. Heike Markus-Michalczyk

19:30 **Dinner**



Day II Friday, 15 September 2016

09:00 **Welcome**

Session II: Habitat Restoration

09:10 Dr. Bastian Schuchardt (BioConsult)

09:25 Roger Morris (Bright Angel Coastal Consultants Ltd.)

09:40 Yves Plancke (Flemish Government, Department Mobility and Public Works)

09:55 Discussion

10:10 **Working-Groups (Session II)**

7 small groups work on different questions Results and ideas will be collected and then presented within the "Sharing"-session

10:40 **Coffee Break**

Session III: Legal Issues

11:10 Prof. Mike Elliott (University of Hull, Institute of Estuarine & Coastal Studies)

11:25 Emma Hawthorne (Natural England)

11:40 Hendrik Schoukens (University of Ghent)

11:55 Discussion

12:10 **Working-Groups (Session III)**

7 small groups work on different questions Results and ideas will be collected and then presented within the "Sharing" - session

12:40 **Lunch**

Session IV: Communication

13:15 Tina Stroobandt (Jusbox, on behalf of Waterwegen en Zeekanaal NV)

13:30 Dr. David Parker (Eurosites & Dee Estuary Conservation Group)

13:45 Alexander Porschke (NABU, Hamburg)

14:00 Discussion

14:15 **Working-Groups (Session IV)**

7 small groups work on different questions Results and ideas will be collected and then presented within the "Sharing"-session

14:45 **Coffee Break**

15:15 **Sharing & Feedback**

15:50 **Concluding Words (Elbe Habitat Foundation)**

16:00 **Get Together**

Speakers



State Secretary Wolfgang Michael Pollmann

Head of Hamburg Ministry of Environment and Energy

Behörde für Umwelt und Energie, Neuenfelder Straße 19, D-21109 Hamburg / Germany

State Secretary Wolfgang Michael Pollmann, born 1961 in Hamburg, Germany. Diplom Biologist, University of Hamburg, Germany. Previous positions have inter alia been: Head of Technical Cooperation Projects for the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Peru and Mexico (2009 – 2015), Specialist Coordinator for rural development, environmental policy and the Amazon regional programme for the German Development Service (DED) in Peru (2006 – 2009), Freelance consultant for environment and sustainable development with assignments in Peru, Mexico, Belgium, Hungary, Tunisia, Morocco and Algeria (2001 – 2004), State Secretary for the Environment (1997 – 2001), Head of a division in the Hanse-Office, the common institution of the federal states Hamburg and Schleswig-Holstein to the European Union in Brussels with responsibility for the issues of environmental and energy policy (1993 – 1997), Environmental Authority of the Free and Hanseatic City of Hamburg (1991 – 1993), Member of Hamburg City Parliament, Chairman of the Committee on Port and Economic Affairs (1991 – 1992) and Managing Director of Botanischer Verein zu Hamburg e.V. (1990).



Dr. Elisabeth Klocke

Elbe Habitat Foundation

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Chemist, certified Foundation Manager

Elisabeth Klocke has been the Director of the Elbe Habitat Foundation since 2013. Besides managing the Foundation, she is also involved in the planning and implementation of its restoration measures. Her position also includes creating acceptance for these measures and raising awareness of the challenges of estuary management.

With 20 years of experience working in the Ministry for Environment and the Senate Chancellery of the Free and Hanseatic City of Hamburg, she has obtained considerable administrative experience. Acting in the capacity of Project Manager, she was instrumental in developing the Integrated Management Plan for the Elbe Estuary.



Ir. François Kremer

Policy Coordinator Natura 2000, European Commission

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Master of engineering sciences (agronomy/forestry), University of Louvain, Belgium.

European Commission, DG ENV, Nature Unit: Policy coordinator for Natura 2000, Policy Officer for the Netherlands and Luxembourg, correspondent for Natura 2000 & Forests and for Ports & Estuaries. Previously: EC Nature Unit: Policy Officer for Benelux and Germany. EC, DG AGRI: Policy Officer for rural development, forest protection and forestry policy. Luxembourg Environment Ministry, forest department: engineer for forest and river management and nature conservation.



The Natura 2000 Biogeographical Process, embracing Estuaries

The Natura 2000 Biogeographical Process is a practical framework to support knowledge building and cooperation on the management of Natura 2000 at the biogeographical level, aiming at achieving coherence in the management of the Network. It involves Member States, stakeholders, practitioners and the European Commission, working together in a spirit of collaboration. The focus of the process is on improving the conservation status of endangered habitat types and species, making use of information from the Member States, including the results of the EU State of Nature Report. Work includes the development of joint strategies, plans ('roadmaps') and concrete cooperative actions. In 2012 the Netherlands hosted a first Natura 2000 Seminar for the Atlantic region, followed by thematic workshops, including the present one on 'Embracing Estuaries'. A second seminar is scheduled for October 2016 in Ireland.

The habitat type 'Estuaries' is present in the Atlantic-, Baltic, Black Sea-, and Mediterranean biogeographical regions. According to the European Topic Centre on Biological Diversity its conservation status is 'unfavourable – bad' in all regions except for the Black Sea, while being worst in the Atlantic region. In the Baltic Sea estuaries are also assessed as critically endangered in HELCOMs 'Red List of Baltic Sea underwater biotopes'. Pollution, changes in water bodies, shipping lanes, port development, urbanisation and fishing are mentioned as the main threats.

At the 2012 Atlantic Seminar main issues for consideration were identified: Natural dynamics, large scale loss of habitats, connectivity, sediment management, invasive alien species, climate change and communication. Promoting an integrated approach for estuaries in Natura 2000 management and in developing plans, projects, etc. was considered as a key objective for cooperation. The seminar also recommended concrete action, including inter alia a workshop



on integrated management planning in estuaries, the identification of demonstration projects and best practices, the establishment of cooperation processes on integrated estuaries management, the development of principles for effective management, with special attention for integration of socio-economic priorities and the establishment of monitoring mechanisms.



Christina Müller

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2004 – 2010: Studies of Biology at the Goethe University in Frankfurt/ Main, Germany

2009 – 2010: Diploma theses at the Senckenberg Research Institute (Germany), Botany department about the plants, the vegetation and biotope types of the Nidda river banks in Frankfurt/Main

Since 2009: part time employee at the Botanical Garden and the Palmengarten in Frankfurt/ Main, Germany

2010 – 2015: Scientific officer at the Senckenberg Research Institute, Botany department. Project: ‚Distribution of rare plants in Hesse and climate change‘ for the Hessian State Office for Environment and Geology

Since Sep. 2015: Scientific officer at the Federal Agency for Nature Conservation



Distribution and conservation status of habitat type Estuaries

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The presentation gives an overview of the distribution, the conservation status as well as the main threats and pressures of the habitat type “Estuaries” in Europe with a focus on Germany. Estuaries (Habitat type 1130) are the downstream part of a river valley and subject to the tide and extending from the limit of brackish waters. They contain the river mouth together with the adjacent shore and flooding areas. Unlike ‘large shallow inlets and bays’ (Habitat type 1160), river estuaries are coastal inlets with a substantial freshwater influence. Estuaries can be found at the mouths of most large rivers in Europe.

In Germany, estuaries occur in the atlantic and continental (Baltic sea) region, mainly in Lower Saxony and Schleswig-Holstein. In the atlantic region, estuaries can be found at the river mouths of Ems, Weser, Elbe, Eider and Stör, while in the continental region they occur at Trave, Warnow and in the national park “Vorpommersche Boddenlandschaft”.

The conservation status of estuaries was estimated unfavourable-bad (U2) in the atlantic (and baltic) region of Europe. In Germany the conservation status was determined unfavourable-bad (U2) for both regions in the last National Report 2013 as well. The unfavourable-bad conservation status is due to the bad assessment of the parameters “structures and functions”



and “future prospects”. Main threads for this habitat type are limitations to the dynamic caused by removal of sediments, human induced changes in hydraulic conditions, pollution to surface waters as well as the building of shipping lanes and ports. For a lasting improvement of the conservation status, it is necessary to ensure a natural flooding regime coupled with the influence of tides and brackish water.



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Biologist, experienced in the field of the protection of the Waddensea and estuaries, in implementation of Natura 2000 and WFD, in habitat restoration, in conflicts between navigation, land use and nature conservation.

1985-1990: studies in biology at the University of Bremen

1990-1993: University of Bremen, working on different projects, mainly on a conceptual framework of the renaturation of the river Unterweser and its marsh ("Rahmenkonzept zur Renaturierung der Unterweser und ihrer Marsch")

1994 – 1996: DVWK - Deutscher Verband für Wasserwirtschaft und Kulturbau, working in the field of restoration projects

since 1996: WWF-Germany, responsible for estuaries and river policy



Integrated Management Plans for the protection of the German estuaries: from "paper tigers" to the implementation of measures

The three big German estuaries Elbe, Weser and Ems are not in a favourable status. For all three estuaries there are well-grounded Integrated Management Plans for the implementation of the aims of Natura 2000. These plans contain the necessary measures to ensure the restoration or maintenance of natural habitats and species of community interest. Three or four years ago the IMPs of the Elbe and Weser were finalized. For the Ems there is only a draft of the IMP.

But although there are IMPs, the ecological situation is continuing to deteriorate. Due to the deepening and constructions for navigation as well as the spatial reduction of the aquatic structures by diking, the hydro morphological conditions of the estuaries have been changed. In consequence, even without further human activities, there is an unnatural sedimentation within the side areas. This intensive sedimentation is responsible for the silting up of valuable aquatic habitats such as shallow water areas and for the degradation of banks as habitat for fauna and flora.

At the Elbe, Weser and Ems large measures are necessary to reverse this trend. These measures have to be effective against the hydro-morphological conditions, which have been changed by human activities. Because the function as a navigation channel should be maintained, the restoration measures of estuaries have to be placed in existing side areas or in areas which have to be recreated. In practice, however, normally only small and cost-efficient measures with low conflicts to other stakeholders are implemented. These measures are often

compensation measures for infrastructure projects which have, for their part, a bad impact on the estuaries.

Therefore, non-governmental organisations demand an effective implementation of Natura 2000:

A programme for the implementation of the IMPs, which is featured with enough financial resources and a binding timetable for target achievement

The implementation of measures which are large enough to reverse the negative trend in the development of the German estuaries

A strict interpretation of art. 6.4 of the Habitat Directive with high demands on the justification for imperative reasons for overriding public interest and on the analysis of alternative solutions in the case of a project which will adversely affect the integrity of the Natura 2000 site.



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Dr. Kirsten Wolfstein studied hydrobiology at the University of Hamburg, Germany. During her works in interdisciplinary international projects on European estuaries, she obtained broad knowledge on estuarine ecology. After having left science, she focused on the implementation of European environmental directives e.g. the set-up of WFD criteria as well as N2000 management plans for the Dutch Ministry of Transport and the Province of Zeeland. She currently works at Hamburg Port Authority in the department 'Competence Centre Elbe and Sediments' on various aspects of estuarine management.



TIDE: Integrated management for estuaries

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Estuaries are amongst the most socio-economically and ecologically important environments. They are highly used by mankind, but also have a high ecological value. Therefore, they are protected, for example by European environmental directives. Given these circumstances, the management of estuaries is very challenging.

The EU INTERREG IV B project TIDE (Tidal River Development) has brought together interdisciplinary expertise of partners of various institutions located at the four estuaries Elbe, Humber, Scheldt and Weser to cope with the challenge of estuarine management. TIDE used the approach shown in Figure 1. It consisted in increasing the understanding of estuarine structures and processes, and their historical development. Together with an inter-estuarine comparison and an inventory of the Ecosystem Services which are provided by the estuaries, the knowledge on estuarine functioning forms the basis for a successful integrated estuarine management.

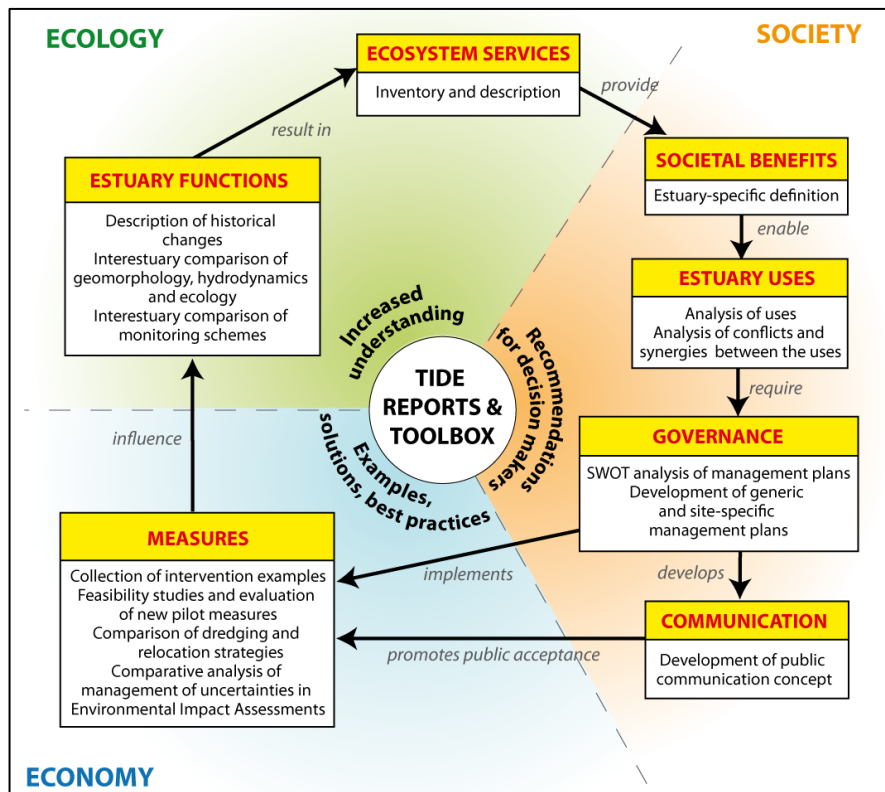


Figure 1: The TIDE approach

Estuarine management has to face (inter)national policies, politics, as well as administration and legislation spheres, to develop various plans and to meet the regulations. Based on an enhanced understanding of estuary uses and synergies/conflicts between them, site-specific management plans or strategies can be developed which form the background for respective management measures. For both the implementation of management plans as well as for measures, an adequate communication strategy has become increasingly important for the acceptance of the decisions. By assessing the realised measures, the impact on estuarine functions can be identified – and so the wheel turns full cycle. TIDE has assessed 39 management measures that have been carried out or are planned in the TIDE estuaries and produced factsheets which provide information on each measure.

The main TIDE recommendations for integrated estuarine management are:

- consider the system as a whole when implementing management plans and measures
- use the Ecosystem Services approach
- accumulate and share knowledge of estuary structure and functioning
- use best practices from similar cases
- practice adaptive management
- employ an appropriate and adaptive monitoring strategy
- apply an appropriate communication strategy.

All outcomes of the project can be found in the internet (www.tide-toolbox.eu) (Figure 2).



TIDE toolbox

- » Start
- » About TIDE toolbox
- » Glossary
- » Management issues
- » TIDE tools
- » Reports
- » Management measures
- » Links

TIDE toolbox
Guiding Estuarine Management

Due to their high dynamics and various uses the management of estuaries demands an integrated approach taking into account estuarine functioning, appropriate governance and the implementation of measures based on knowledge and experience. TIDE offers a selection of tools and recommendations.

Functioning »
Increased understanding
• Ecology
• Hydrogeomorphology
• Ecosystem Services

Governance »
Recommendations for decision makers
• Management plans
• Estuary uses
• Communication

Measures »
Examples, solutions and good practice
• Pilot studies
• Feasibility studies
• Evaluations

Integrated Management »

Provides
Influences
Implements/promotes

Give us feedback »

www.tide-project.eu

Project part-financed by the European Union (European Regional Development Fund)

The Interreg IVB North Sea Region Programme

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Figure 2: TIDE-toolbox (www.tide-toolbox.eu)

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After his diploma in biology at the University of Hamburg in 1992 Christian had worked as a freelancer in field surveys. Since 1992 he is employed as a scientific officer at the Hamburg Ministry of Environment and Energy. His field of activity stretches across all aspects of Natura 2000, including site protection, assessment plans, monitoring, reporting, management plans and the design of nature conservation measures.



Integrated Management Plan for the Elbe Estuary

- Implementation and lessons learned –

The tidally influenced lower reaches of the Elbe, along with its tributaries, extend from the North Sea to just above Hamburg, a total of 148 km. Aside from the port of Hamburg and a small number of other industrial sites, the entire area of about 46.000 ha is protected under the Natura 2000 networking programme because of its great diversity of estuarine habitats and species.

However, the Elbe estuary is also important internationally as an economic region, mainly based on the function of the Elbe as a shipping route to Hamburg, the third largest port in Europe. The numerous instances of human intervention throughout the history of the Elbe, especially land reclamations by enclosures and river deepenings, have changed the dynamics of the river considerably (e.g. increasing tidal range and flow rate, dramatically risen quantity of sediment, critical level of oxygen during summer).



Fig.1: Natura 2000: 9 SACs and 4 SPAs (IBA- and Ramsar-Sites). Conservation objectives: 13 habitat types (annex I HD), 12 species (annex II HD), 26 species of wild birds (annex I BD)

After all, it has become clear to all interest groups that these changes not only have an adverse effect on the biodiversity of the Elbe estuary, but also bring significant economic disadvantages (for instance, the increased cost of dredging and sediment deposition). Addressing several of these problems at once is therefore a genuine win-win situation for both nature and the economy. This realisation led to a discussion of a "Natura 2000 Management Plan" that would respect both nature conservation and economic considerations, bringing them together in one united approach. Thus, the concept of an integrated management plan (IMP) for the Elbe estuary was born: one that would include the many different groups with an interest in the Lower Elbe and have them all working together.

In 2008, the states of Hamburg, Lower Saxony and Schleswig-Holstein, in cooperation with the Hamburg Port Authority and the Federal Administration of Waterways, agreed on the structure of this management plan. As part of the planning process, committees were formed to represent interest groups concerned with nature conservation, shipping, industry, coastal defence, agriculture, fishery and recreation.

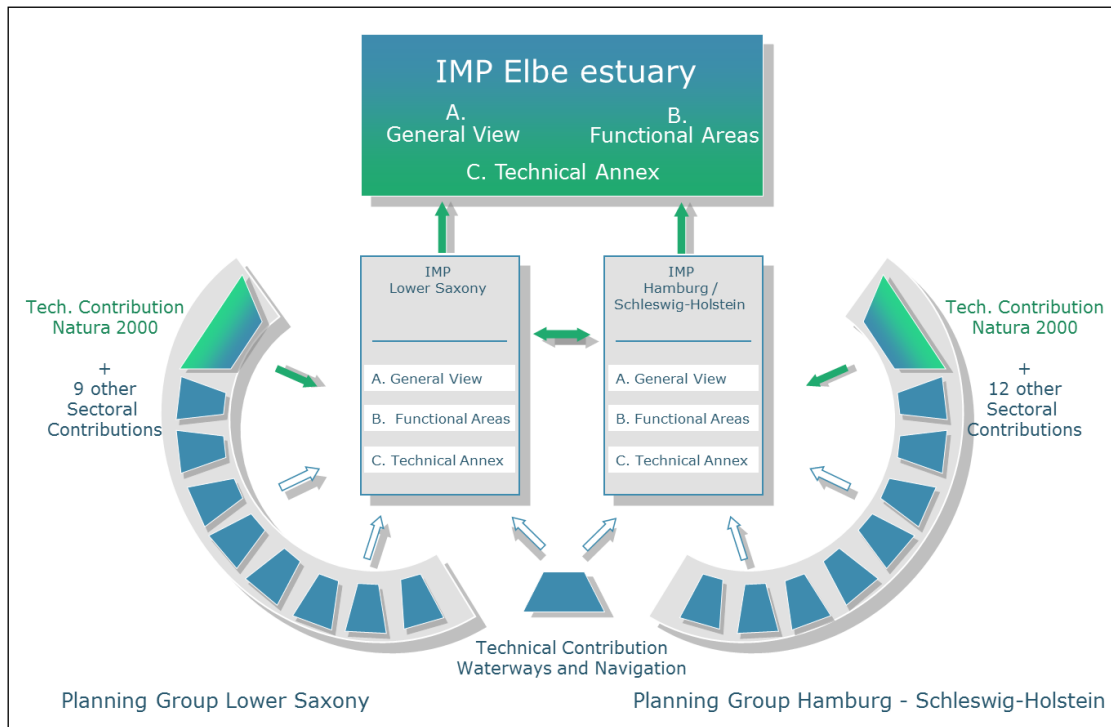


Fig. 2: IMP project organisation (IMP Elbe Estuary, Elbe estuary working group 2012)

As a result of the intensive discussion process each group worked out a specified contribution which was included in the integrated management plan. Finally approved at the beginning of 2012 this plan achieves the following requirements: Proposals for measures to achieve the Natura 2000-objectives, guidance for projects and measures, additional basis for the assessment of plans or projects and improvement of planning security. It's a joint, trans-state plan with no legal binding force, but a guideline for state actions and a voluntary commitment of all stakeholders.

The extensive management concept provides mainly management schemes for the habitat types estuaries, riparian forests and grasslands and the species Elbe water dropwort, twaite shad, meadow birds and water fowl. Therefore the measures are aimed to maintain or restore a favourable conservation status of natural habitats and species of wild fauna and flora of Community interest. Some are also designed to enhance information and knowledge about the processes in the Elbe estuary and to support public awareness.

All in all the management plan proposes about 200 measures. Many of them outline concepts that are related to clearly defined sites of the estuary, others describe general concepts to be applied at any place in the estuary. Today about 130 nature conservation measures have already been implemented, are in progress or in a concrete status of planning. The talk will exemplify the implementation by showing measures giving back room to the river and improving the conservation status of the Elbe water dropwort, a plant species endemic to the limnic tidal part of the Elbe.

Furthermore the talk will sum the experiences of about 5 years of implementation of the management plan and will give an outlook to the challenges of the future.

Marjan Datema

Ministry of Economic Affairs, Nature and Biodiversity Department

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Mrs. Marjan Datema (1957) is a jurist and policy officer at the Dutch Ministry of Economic affairs, Nature and Biodiversity Department. Since 2010 she is working on the realisation of the Integral Management plan Eems-Dollard. Hereby the process to create one report together with the German colleagues had her special interest.

Before she started to work at the Dutch Ministry of Economic affairs, she had worked at the Dutch Ministry of Agriculture, Nature and Food Quality on the subject of merging agriculture and nature. In the past she has also worked on authorisation in the framework of the nature conservation act.

The integral management plan Eems-Dollard: Getting started with cross-border N2000

The Eems-Dollard Estuary is a special Natura 2000 area. It is the biggest brackish tidal water area of Europe. Furthermore it is also an area in which the state border is not laid down. One part of the area is both Dutch and German territory.

The Netherlands and Germany have their own way in which they protect Natura 2000 areas. In the Netherlands a Habitat area is pointed out after registration and incorporation in the European list. After participation and possibly an objection and appeal procedure sectors, the indication becomes definitive. Within 3 years after the final indication a management plan (Beheerplan) for the area is determined.

In Germany an Integrierter Bewirtschaftungsplan (IBP) is created for an estuary. At first a craft contribution is made. These are substantive descriptions about the interests of the different sectors. After that the government will consider where the interest of the different sectors will converge or conflict with those of the environment. With the involved stakeholders conversations were held about these conflict analysis. Out of these conversations it becomes clear to what extent there is support for the desired steps. After rounding off the conversations a list with desired steps out of the N2000 is delivered.

For the Eems-Dollard the Netherlands and Germany have agreed on using the German process. For the Netherlands it was interesting that the whole process of elaboration of the protection happens in close collaboration with the stakeholders.

How did the process go?

It took a lot of time to make craft contributions. This was because not only the German but also the Dutch information has to be processed. For the Dutch stakeholders this was a new way of working.



The craft contribution N2000, the most important part of the IMP took a lot of time. The German process is very different from the Dutch one. The method of valuing the nature values differs also. A common valuation method is developed in joint deliberation.

There is now a craft contribution nature in which a comprehensive description of the values of nature and a common judgement of the state of nature has been given. Also a list of 54 desirable measures of improvement is made.

The interests of nature and the other sectors are not the same everywhere. After the conversations a list of 51 measures of improvement remain, of which 28 were joint. These ones were recorded as proposal for adjustment in the IMP. During the set-up of the IBP there was intensive cooperation between the Dutch and the German governments. They want to continue this collaboration.

The IBP process was not an easy process. It was a big challenge! The most important result is an image shared by both countries about the state of nature in this area and the list with 28 possible joint measures.



Nolwenn Briand

Head of Regional Direction for environment, land planning and housing policies of Normandy

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- Managing task teams with state services to support stakeholders in complying with environmental policies and matters, for infrastructures projects in Seine estuary
- Managing implementation of environmental policies in the Seine Estuary National Nature Reserve
- Following, reporting and counselling for Seine estuary research programs
- Secretariat of Seine estuary scientific council



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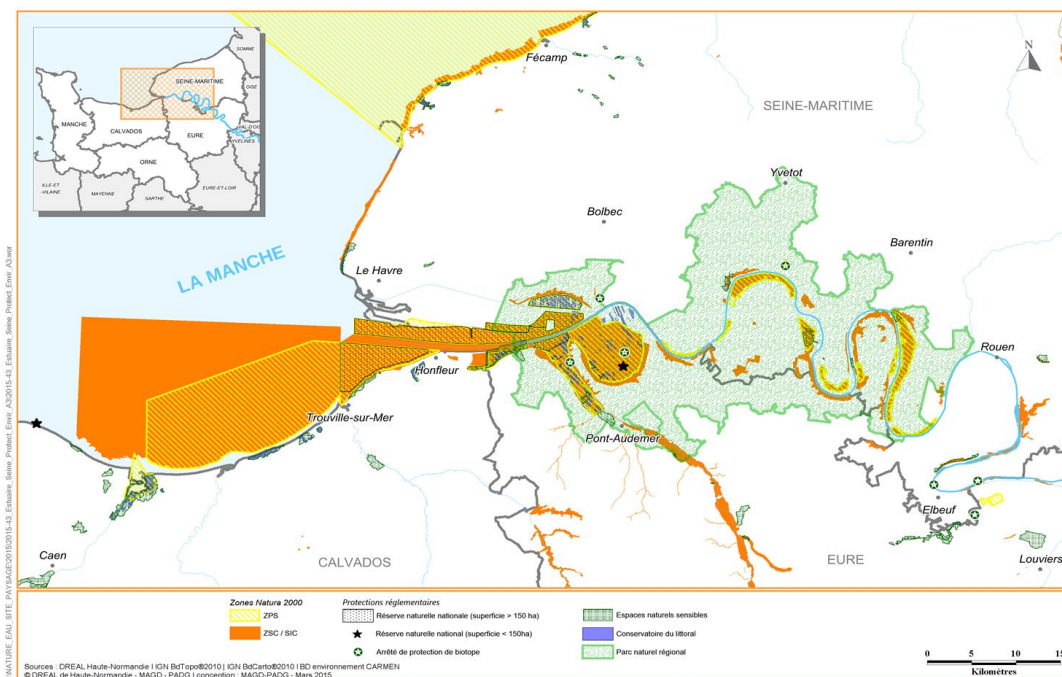
- Managing implementation of Natura 2000 policie in the regional territory of Normandie
- Monitoring several Natura 2000 sites in the Seine Valley
- Technical and financial management of local authorities involved in Natura 2000 network



Management of the Natura 2000 sites in the Seine Estuary

Four Natura 2000 management plans exist in the Seine Estuary, along with 3 sites designed as Special Areas of Conservation (SACs) and one large site, overlapping the 3 others, as "Estuary and Wetlands of Downstream Seine" Special Protection Area (SPA) for birds.

Les protections de l'environnement et des paysages de l'estuaire de la Seine



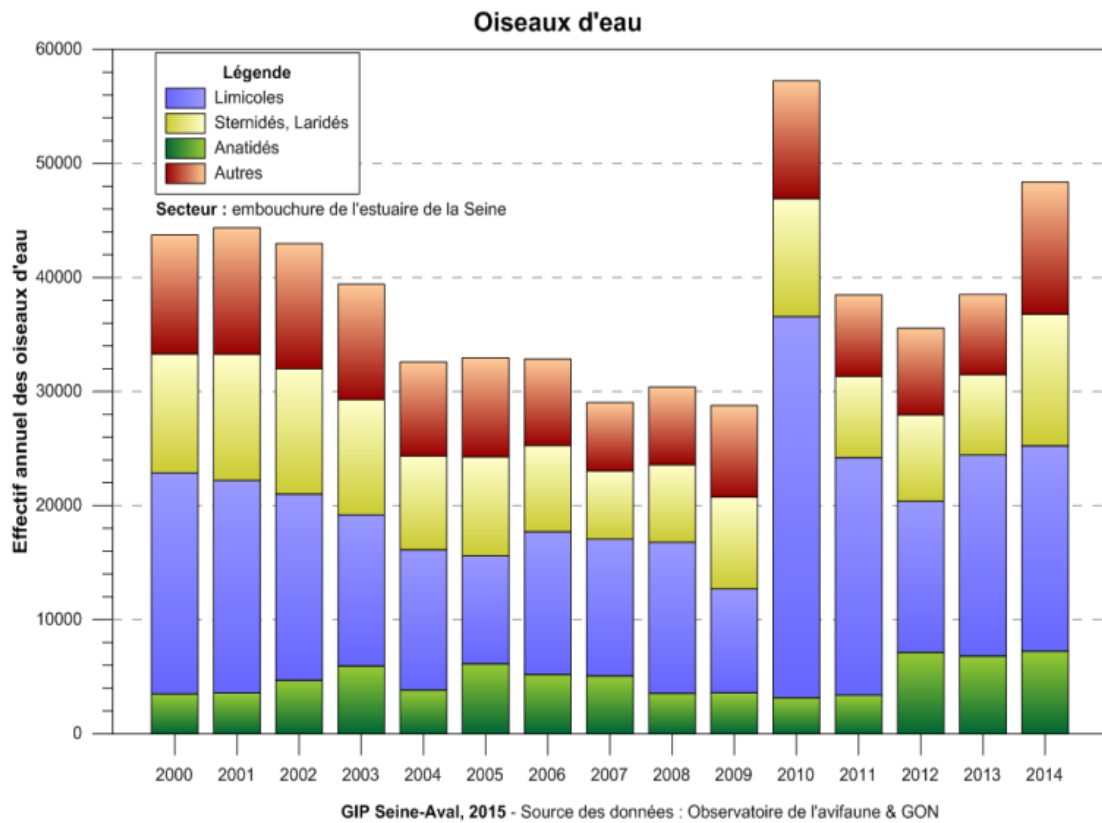
Those Natura 2000 sites are completed in Seine territory by numerous other tools, allowing French state and local authorities to implement strong environmental policies, protection and incentives to protect the estuarine ecosystem.

First of all, a global scheme at Seine estuary and bay scale, with mandatory orientation and planning that divide since 2006 the territory in space to conserve, space that can be build and space to prefer for logistic and port infrastructure. This scheme secure the balance between infrastructure development and estuary conservation ; areas considered as green infrastructure overlap the major issues areas identified in estuarine SAC and SPA management plans.

Among those tools, the Estuary National Nature Reserve is a strictly protected nature reserve of 8 000 hectares located at the mouth of the river. The implementation of birds and habitats directive is among its main purpose. The Regional Natural Park is one of the other key tool for the estuary conservation: gathering local authorities, strongly implying local elected representatives, it catalysed the implementation of european and national policies for environment, landscapes and cultural heritage. The park territory allows to integrate those main matters in a network of small cities, villages and the entire green infrastructure in between and to involve local population.

Other tools are presented on the map attached, as landscape protection area, and acquisition by the "Conservatoire du Littoral", French coastal protection agency.

Recently, the French state has decided to address the revision of Seine estuary Natura 2000 management plans. The most recent management plan was adopted in 2006, implying a revision work in progress starting this year. Nevertheless, each environmental tool has his proper sort-of management plan, with various shape and constraint degree, created or revised according different calendar. As a consequence, environmental protections of Seine estuary have continued to evolve, allowing first encouraging signs to show with an increase of global figures about birds population.



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Tania worked at the Humber Nature Partnership from January 2010 until August 2016 as the Project Manager for the Humber Management Scheme. The role involved overseeing the partnership and management plan for the Humber Estuary European Marine Site. Project work included overseeing research to understand the impact of recreation on SPA wintering birds and developing and delivering recreation management. Tania has a BSc Marine Biology and an MSc in Marine Resource Development and Protection.



The Humber Management Scheme: partnership and management of the Humber Estuary European Marine Site

The Humber Management Scheme is the management plan for the Humber Estuary European Marine Site and is coordinated and delivered by the Humber Nature Partnership. The Humber Management Scheme is the most effective and efficient way for statutory organisations to discharge their duties, by working together to deliver, with one management plan, the sustainable management of the estuary.

Launched in 2005, the Humber Management Scheme focuses actions in 5 key areas; policy and legislation, site safeguard and management, research and monitoring, advice and communication and publicity. In addition to this, summary documents are produced and reviewed regularly on how major activities, such as port management and fishing, are managed.

Delivering projects in partnership is the essence of what the Humber Nature Partnership does to meet the conservation objectives of the sites. Projects include research to understand the impact of recreation on SPA wintering birds, the development of an in-combination database to assist with the in-combination assessment as part of the Habitats Regulations Assessment, and awareness raising and engagement projects with recreational users.



The Humber Nature Partnership is one of 48 Local Nature Partnerships around England. The establishment of Local Nature Partnerships came about as a result of commitments made by the UK Government in the Natural Environment Paper 2011. The Humber Nature Partnership came about from the integration of Humber INCA (Industry and Nature Conservation Association) and the Humber Management Scheme. The vision of the organisation is to protect and enhance the Humber Estuary's world class environment for wildlife, the UK economy and people, gaining benefits for all. The Partnership brings together all interests in the Humber from industry, nature conservation, academia to interested individuals.

Through the establishment of the Humber Nature Partnership, progress is being made towards the better integration of ecological management of the Humber Estuary. Key challenges face the management of the Humber Estuary European Marine Site such as having funding and resources in place to deliver conservation projects. However, a very strong partnership and community is in place on the Humber to drive forward projects to ensure the conservation of the Estuary.

Prof. Dr. Patrick Meire

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Patrick Meire (1958) studied Biology at the University of Gent where he also obtained his PhD. Before being appointed as a senior researcher at the Institute of Nature Conservation, a scientific institute of the Flemish Government, he worked during 6 months at the University of Oxford and one year at the Dutch Delta Institute for Hydrobiological Research in Yerseke. In 1995 he became the holder of the chair of Integrated Water Management at the University of Antwerp. In 1999 he was appointed full professor at the Department of Biology and head of the Ecosystem Management Research group. His research is focussed on the ecology of aquatic systems and how to manage these.



Ecosystem services of estuarine and coastal areas: the basis for restoration and an integrated approach?

Coastal areas have always attracted people and by now a large part of the world population lives within 150 km from the coast. This of course resulted in an enormous pressure on coastal habitats like estuaries, coastal wetlands, coral reefs and others. Next to these anthropogenic impacts sea level rise and climate change form a new and major treat to these habitats. The coastal zone is however not only impacted from the sea side but to a large degree also by changes inland. Discharges from rivers are heavily manipulated resulting in too much or too little input to the coastal zone. A decrease in the both fresh water flow and sediment load result in drowning of deltas and loss of habitats, an increase in discharge of nutrients, sediments and pollutants on the other hand are also disrupting coastal ecosystems. Loss and deterioration of coastal habitats not only result in a loss of biodiversity but also in an enormous loss of ecosystem services delivered by these habitats. Coastal flood risks, erosion, eutrophication increased significantly and traditional coastal engineering, such as the building of sea walls, dikes and levees is seriously challenged in many places as it often exacerbates problems and hinders the natural processes maintaining coastal habitats and their build up with relative sea level rise. Recently, ecosystem-based adaptation has been brought into large-scale practice, as a regional solution that is more sustainable and cost-effective than traditional coastal engineering in certain coastal areas. It aims at creating ecosystems, such as tidal marshes, mangroves, dunes, coral and shellfish reefs and restoring ecosystem services. The concept of ecosystems services, a useful, unifying concept, allows to formulate more integrated objectives leading to more integrated projects. In this paper we describe the ecosystem services delivered by estuarine habitats and species and how to use the concept to define objectives. Examples are reducing the nutrient load, reducing the increase in high water



levels, reducing wave height. These objectives can be translated in types and surfaces of habitat that should be restored to achieve these objectives. This approach led to a restoration plan for the Schelde estuary of over 3000 ha of new habitat.

In this presentation we document the changes/losses in ecosystem services delivered by coastal habitats and show, based on the work done in the Schelde estuary, how defining objectives in terms of ecosystem services is a crucial step towards coastal habitat restoration and ecosystem based adaptation.

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Manfred Meine, born in 1956, majored in coastal engineering at University of Hannover. Since 1989 he has held different positions at Hamburg Port Authority, e.g. project manager for the mechanical treatment of harbour sediments and for the development of new port infrastructure in Altenwerder. Since 2007 he has been dedicated to the sustainable development of the Elbe Estuary, the vital artery for the Hamburg metropolitan region. In this function he developed the newly created tidal water project Kreetsand. From 2009 to 2013 he coordinated the Interreg IVB-Project TIDE "Tidal River Development".



Field trip Kreeksand tidal waters

Aiming at a decrease of tidal energy and the reduction of upstream sediment transport (tidal pumping) the Hamburg Port Authority (HPA) and the Federal Waterways and Shipping Administration (WSV) set up an innovative concept for a new approach to a sustainable development of the Elbe estuary. Besides an optimisation of sediment management and river engineering measures at the Elbe mouth this concept proposes the creation of shallow water areas which are suited to moderate the tidal action and thus reduce tidal pumping of fine sediments.

As a first step towards the establishment of new tidal volume HPA is creating 30 ha of shallow water area on the Wilhelmsburg Elbe island called Kreeksand tidal waters. At this site, dyke realignment had already been carried out in 1999, but the new foreland still remained within the supralittoral zone and was not subject to daily tidal action. Therefore HPA decided to transform the dyke foreland into a tidal shallow water area with the overall objective of dissipating tidal energy.

Also, this pilot project will provide new tidal habitats and host endangered species like the Elbe water dropwort (*oenanthe conioides*) and serve as a showcase model for future measures of the new river engineering concept. Furthermore, it shall be used to improve the public understanding of the function of tidal systems and estuaries. The project was awarded with the PIANC Working with Nature Award 2014.





Fig 1: Vision of Kreditsand new shallow water area after completion

The creation of the new shallow water area requires the removal of approximately 2 million cubic metres of soil, of which one quarter is contaminated and therefore has to be disposed of professionally. The goal is to utilise as much suitable material as possible in other soil construction measures. Therefore, a clever soil management is crucial. The excavation takes place in sections and is dependent on soil layers and ground water levels. Meanwhile the opening to the Norderelbe has already been established so that one third of the new shallow water area is completed and subject to the tides already.



Fig 2: Present status of construction works

An exhibition exploring the complex relationships and special features of the project can be seen in the 'Dyke Booth' pavilion at the southern end of Kreetzand. During the field trip the project will be explained and showcased.

Dr. Bastian Schuchardt

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Dr. Bastian Schuchardt is a biologist with over 30 years of experience in environmental research and planning in estuarine, coastal and offshore regions. As co-owner of BioConsult he has been working for 20 years with the focus on forecasting, monitoring and assessing environmental dynamics, impacts and improvements. The present focal points of his work include implementation of the Water Framework as well as Marine Strategy Directive and the resilience of the Wadden Sea estuaries to climate change.



Estuarine Habitat Restoration in Germany: Experiences and Perspectives

The coastal plain estuaries of the rivers Eider, Elbe, Weser and Ems are to a large extent protected according to the habitat directive. However, the ecological situation especially in their inner parts is heavily stressed mainly as a result of long term development (partly still ongoing) of coastal defence, shipping and harbour activities. Loss of estuarine habitat, increase of tidal range and (partly) deterioration of the oxygen situation is evident. Restoration of estuarine habitats is therefore necessary for all estuaries.

Different types of measures for restoring estuarine habitats have been already performed and partly monitored. From these experiences it becomes obvious, that restoration of several types of estuarine habitats is possible if adapted adequately to the specific recent situation along the estuarine gradients and dynamics of energy, salinity and turbidity. Successful restoration of tidal wetlands in different salinity zones as well as shallow waters in the freshwater reaches is well documented. However, experience also show, that restoration of some types of habitats as side-arms is hardly possible under the recent man made changes of the estuarine systems or might require permanent maintenance. Further restrictions are limited availability of space, conflicts with land owners and coastal defence as well as high costs. Conflicts between different positions within nature conservation can produce further challenges. Especially the integrated management plans under work or already finalized in the framework of the habitat directive have become a strong driver for habitat restoration (concepts). However, habitat regeneration in the estuaries is still mainly due to compensate habitat losses resulting from infrastructure projects and other than compensatory measures have not yet started.

However, two concepts show that recently also other drivers than nature conservation are coming into the arena: the masterplan for the restoration of the inner Ems estuary and the “hydraulic engineering and sediment management concept” for the Elbe Estuary. These concepts are aiming also on other than ecological problems emerging from former deepening measures and are opening possibilities for synergies between sediment management, coastal defence, adaptation to climate change and estuarine habitat restoration.



Roger Morris

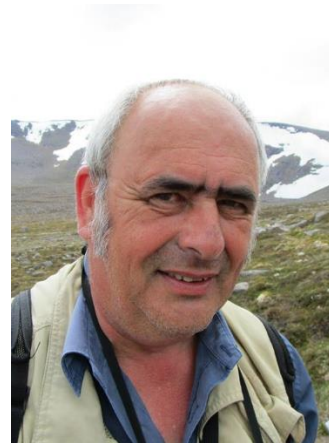
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Roger Morris (BSc, FCIEEM, CEnv., FRES, AMICE) is a coastal management specialist with over 25 years experience of port development, flood risk management strategies, tidal energy projects, physical processes and integrated coastal zone management. Between 1988 and 2009 he was heavily involved in all aspects of designating and managing England's estuaries. Roger represented the UK on the European Commission's *Rivers Expert Group* and *Estuaries Expert Group*; is a former Board Member of Harwich Haven Authority; and has undertaken a variety of international expert assignments in the Netherlands, Eire and Germany (including the Elbe).



Inter-tidal habitat creation - experience in England

This study examines the outcomes of six managed realignment projects constructed to compensate for loss of inter-tidal habitat as a result of port development and flood defence construction. The projects vary in age and in outcome.

Much of the emphasis within project design has been the need to create mudflat habitat. Evidence from the six projects suggests that in the majority of cases mudflat is only a short-term result, and that ultimately the majority of the sites become vegetated. This is corroborated by studies of older sites breached during storms. The timeframe in which vegetation becomes established varies, depending upon the position the site occupies within the tidal frame, and the suspended sediment concentrations of the estuary concerned. Similar experiences seem to be emerging elsewhere in Europe, including compensation for *Mühlenberger Loch* on the Elbe. There is one exception (Trimley Marshes) where mudflats do appear to be the long-term outcome. We cannot be entirely sure why this site is the exception to the rule, but it seems likely that its orientation in relation to prevailing winds may be a significant factor.

These results point to a need to re-think the design of realignment sites to make use of hydrodynamic factors that govern mudflat evolution. There are some useful models that might helpfully inform this process. Several estuaries in England display unusual characteristics in which there appears to be more mudflat than might be expected from the cross-sectional area of the mouth. The Ems-Dollard Estuary also offers an important model. A study conducted by a team led by Roger Morris in 2013/2014 examined these compensation sites and a variety of others, both on land and in the freshwater environment. It found that compensation ratios were not uniform but tended to be in the order of 2:1 when replacing mudflat habitat. One possible conclusion is that compensation sites must be considerably

bigger if sustainable mudflat is to be created. The presentation calls for more research into ways of engineering sustainable mudflat habitat.

Reference:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18861&FromSearch=Y&Publisher=1&SearchText=natura%202000&SortString=ProjectCode&SortOrder=Asc&Paging=10>



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Yves Plancke is employed by the Antwerp Port Authority and is working as a senior research engineer at Flanders Hydraulics Institute, a research institute of the Flemish Government. His expertise are hydro- and morphodynamics of estuaries and other water systems. Over the last few years he was involved in several studies related to the Scheldt estuary and the optimization of the port accessibility, among which the feasibility study and the development of the new disposal strategy in the Western Scheldt, of which he will present the most recent results in his presentation. This innovative idea was rewarded with the "Working with Nature"-certificate in 2016.



A new disposal strategy in the Schelde-Estuary, conciliating port accessibility and nature

To guarantee optimal port accessibility, the deepening of the navigation channel was executed within the scope of the LongTermVision for the Schelde estuary. As the estuary is part of the Natura 2000 network, both an EIA and AA were necessary. A new disposal strategy was proposed, using dredged sediments to create opportunities for nature development. This new strategy was first investigated by Flanders Hydraulics Research, combining several research tools, and performing 2 in situ disposal tests. After a positive evaluation of the tests, the strategy was further developed, and 4 locations were chosen to apply the strategy to. The main idea of the strategy is using dredged sediments to create morphological structures that influence the flow patterns, creating low dynamic areas, which are suited for ecological purposes ("working FOR nature"). Since the 4 locations each have specific characteristics, site-specific relocation strategies were developed, taking into account local flow and sediment characteristics. For 2 locations at the tip of a sandbar a "megadune" has been realized, creating a shadow zone behind the "megadune". For the other 2 locations located along a sandbar, a "sandspit" has been realized, aiming at guiding the flow away from the sandbar. To evaluate the success of this new disposal strategy, an extensive monitoring program was set up and several criteria were defined. Before the start of the deepening the reference situation was monitored. Since then, new measuring campaigns at all locations have been executed to evaluate the effect of the works. Recent results show different effects near different sandbars, both for sediment stability as changes in flow velocities. Nevertheless, ecological results are promising: initial results showed an increase of almost 100 ha new low dynamic habitat, while most recent results (2016) showed an even further increase of almost 140 ha new low dynamic habitat near the 4 disposal locations. During the following years the new strategy and the monitoring will continue, allowing the evaluation of the new disposal strategy on the longer term.

Prof. Mike Elliott

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Mike is a marine biologist with a wide experience and interests in marine and estuarine ecology, human impacts, marine and estuarine management and policy. His teaching, research, advisory and consultancy work includes many ecological components and communities, as well as policy, governance and management of estuaries and coasts. Mike has published widely, co-authoring/co-editing 15 books and contributing to over 250 scientific publications. This includes co-authoring 'The Estuarine Ecosystem: ecology, threats and management' (with DS McLusky, OUP, 2004), 'Ecology of Marine Sediments: science to management' (with JS Gray, OUP, 2009), and 'Estuarine Ecohydrology: an introduction' (with E Wolanski, Elsevier, 2015) and as a volume editor and contributor to the Treatise on Estuarine & Coastal Science (Eds.-In-Chief - E Wolanski & DS McLusky, Elsevier).



He has advised on many environmental matters for academia, industry, government and statutory bodies in Europe and elsewhere. Mike is a past-President of the international Estuarine & Coastal Sciences Association (ECSA) and is also one of the 6 Editors-in-Chief of the international journal Estuarine, Coastal & Shelf Science; he has Adjunct Professor and Research positions at Murdoch University (Perth), Klaipeda University (Lithuania), the University of Palermo (Italy), and the South African Institute for Aquatic Biodiversity, Grahamstown. From 2014 Appointed Independent Non-Executive member of the UK Marine Science Coordinating Committee and member of the Science Advisory Board of Marine Scotland. From 2014, member Society for Underwater Technology: International Salvage & Decommissioning Committee. From 2015 member of the Science Advisory Group of Seafish Ltd. Awarded Laureate of the Honorary Winberg Medal 2014 of the Russian Hydrobiological Academic Society.

How to satisfy industry and nature - the ability to create an integrated Estuarine Planning Support System

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There is only one big idea in estuarine management - how to protect and maintain ecological structure and functioning while at the same time delivering the ecosystem services and societal benefits. The ecosystem services emanate from the natural processes and cover the regulating, provisioning, supporting and cultural aspects. Societal benefits then can be gathered from the ecosystem services but only after inputting time, energy, finance and skills. Hence, in order to achieve a sustainable and successful estuarine management requires all environmental and socio-economic aspects to be considered. A hazard and risk typology will be presented showing that pressures emanate from inside the managed system (termed endogenic managed pressures) and outside the managed system (termed unmanaged exogenic pressures). This involves fulfilling the so-called 10-tenets which inter alia includes a plethora of environmental legislation, both national and European, and many statutory organisations as well as economic imperatives. The 10-tenets contend that to be successful, management measures or responses to changes resulting from human activities should be: Ecologically sustainable, Technologically feasible, Economically viable, Socially desirable/tolerable, Legally permissible, Administratively achievable, Politically expedient, Ethically defensible (morally correct), Culturally inclusive and Effectively communicable. This presentation will discuss the governance and stakeholder involvement and conflicts, and successes and impediments to estuarine integrated management. It will describe a stakeholder typology in that stakeholders are those who help to create problems in the environment by putting materials and structures into the environment; those who remove materials and space from the environment; those who administer the controls and implement the governance from all levels from the local to the global; those who are affected by the problems and those who benefit from the users, and finally those who influence the decision makers such as the politicians and NGOs. It will use examples taken from worldwide including the ability to use the best ecoengineering and ecohydrology principles to achieve sustainable outcomes; for example, the latter includes creating habitats to give wins for human safety, the economy and ecology. It will discuss two types of ecoengineering – Type A in which the environment is modified thus allowing the biota to recover, and Type B in which the biota is supplemented through replanting or restocking. This overall framework will be presented as the DAPSI(W)R(M) approach whereby Drivers (basic human needs) create Activities and Pressures (the mechanisms of change). These then create State changes on the natural system and Impacts on the Welfare of the Human system. These in turn then require Responses using Measures, based on the 10-tenets.

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Natural England is the Government's adviser on the natural environment in England, helping to protect nature and landscapes for people and for the services they provide. I have worked for the organisation since 2004. My current role as senior adviser covers the north coasts of England – east and west. I work closely with statutory bodies and developers to enable sustainable development. I have provided advice on major proposals such as port developments which have involved permanent habitat loss within Natura 2000 sites and required compensatory measures. I also lead on strategic coastal work such as policy planning for coastal management (Shoreline Management Plans).



The South Humber Gateway - World class economy, world class environment

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The South Humber Gateway (SHG) stretches from the outskirts of Grimsby to East Halton Skitter on the south bank of the Humber Estuary. Straddling the county boundaries of North Lincolnshire and North East Lincolnshire, the SHG is seen as one of the most important strategic development locations in the UK. Covering almost 1,000 hectares of development land, it is the local authorities' 'jewel in the crown' as a premier employment site and a key focus in the local economic regeneration plan. The land also supports thousands of waterbirds protected by the adjacent Special Protection Area.

The possibility for conflict and delay was obvious as proposed development came forward; potentially resulting in the loss of the birds' habitat. However, with some imagination, collaboration and hard work we could see that there was also the potential for a solution which benefitted both the natural environment and economic development.

The first priority was to gather better data, and the Humber stakeholders worked together to agree bird survey work for the entire SHG. Once information on the usage, numbers and species of waterbird using the SHG was available, the partners were able to sit round the table and together develop a strategic mitigation plan to identify areas of land which would be managed for conservation; the rest of the land could be developed.



Fig. 1: South Humber Gateway boundary, North East Lincolnshire. This product includes mapping licenced from Ordnance Survey. © Crown Copyright. All rights reserved. Licence number: 100020759 (2015)

Initial funding has been provided by the Local Economic Partnership (a government sponsored economic regeneration body), and North East Lincolnshire Council is currently undertaking ground breaking work to identify a mechanism to secure funding from future developers. The requirement on developers to only provide a financial contribution will speed up the consenting process and enable the sites to be managed as wet grassland habitat in the long term. This shared solution to the development of the SHG, delivered at a strategic level, has unlocked £2 billion of ongoing and planned investment, and 15,000 jobs. The development will be located alongside the creation of 275ha of wet grassland habitat managed for birds; thus helping to ensure that one of Europe's most important estuaries for birds is protected into the future.



Fig. 2: Wet grassland habitat, © Roger Wardle

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Hendrik Schoukens graduated as a Master in Law at the Catholic University of Leuven in 2005. In 2007, he graduated as Master in Environmental Law at Ghent University. In 2010, he received his complementary Master's Degree in Environmental Law at the Facultés Universitaires Saint-Louis and the Catholic University of Louvain.

Since January 2006, he has been working as an environmental lawyer at LDR Advocaten in Ghent, where he focuses on biodiversity-related and planning law cases. In 2011, he co-authored the first edition of the handbook of Biodiversity Law within the Flemish Region (*Handboek Natuurbehoudsrecht, Kluwer 2011*). In 2015, he co-edited a handbook on EU Nature Conservation Law (*The habitats directive in its EU environmental law context: European nature's best hope?, Routledge 2015*). In 2016, he co-edited the first Flemish handbook on the legal aspect of EIA/SEA (*Handboek Milieueffectrapportagerecht, die keure 2016*).

Throughout the years he has published several articles and book chapters in relation to topics such as EIA, air quality legislation, access to justice, climate change and sustainable development.

Since June 2012, Hendrik has been a fulltime assistant at Ghent University. He is currently preparing a doctoral thesis on the legal aspects of ecological restoration under the supervision of Prof. Dr. An Cliquet. Furthermore, he assists with the courses 'Moot Court Public International Law' and 'Diplomatic Law' of Prof. Dr. Frank Maes.



Temporary nature as a driver for nature conservation on private lands: one (legal) bridge too far or a brilliant example of out-of-the-box thinking?

Current nature conservation laws are falling short in delivering the much-anticipated rebound for many of the imperilled species. The reasons that the recovery targets are not being reached are diverse and manifold, ranging from poor enforcement, an overly strong focus on ineffectively managed protected areas to insufficient funding. However, one of the principal causes is the inability of nature conservation law to involve private landowners in the attempts to save, conserve and restore the most endangered and threatened species. In recent years, new regulatory tools have surfaced, offering promising new incentives for nature conservation and restoration on private lands, as a suitable alternative for the traditional to the 'command and control'-approach. In the Netherlands, the concept of 'temporary nature' has emerged, aimed at fostering nature development on private lands which are currently lying unused, merely awaiting their residential, infrastructural or industrial purpose. In return for allowing pioneer species, such as natterjack toads or common terns, to colonize and thrive on these

lands, the landowner is provided with the legal guarantee that he can still freely develop the temporary nature areas in the future. By providing new habitats for pioneer species the increasing use of temporary nature areas yields beneficial net-effects for biodiversity, notwithstanding the eventual removal thereof when the site is developed.

Recent ecological studies have confirmed the potential of the concept of temporary nature for species recovery. In terms of legal underpinnings, different pathways have emerged. The 'right to future development', which is vital in this respect, might be included in a 'derogation in advance' or, as the case may be, be part of a wider species protection programme. However, a lot of uncertainty remains as to the compatibility of such innovative instruments with the EU Nature Directives. In this presentation it is argued that, if applied with the necessary caution and with some insight into the ecological conditions of the sites at hand, temporary nature areas might provide for additional conservation opportunities to arrest the current biodiversity decline. Yet, it should also be safeguarded that the concept is not being abused by project developers as mitigation for harmful developments or by the public authorities as alternative for investing in more robust and long-term conservation opportunities for endangered species. Under these conditions, it might be deemed reconcilable with the derogation clauses mentioned in the EU Nature Directives.

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Tina Stroobandt graduated as a master in Communications Sciences from the UGent in 2002. One of her first assignments in the field of stakeholder management and communications, was to restore the trust of the community surrounding the Polders of Kruikebe. This led to additional degrees in crisis, change management from the UAMS and city and region marketing from the University of Utrecht and several graphical and web certifications. Thanks to the successful stakeholder management and communications strategy implemented in Kruikebe and the Sigmoplan, Tina was involved in many more spatial and European projects. The 27 recommendations on LinkedIn describe her as "result driven, problemsolving, creative and warm".



The Polders of Kruikebe: from NIMBY to PIMBY

Kruikebe is a small municipality in Flanders, across the river from harbor city Antwerp. The inhabitants of this region faced a substantial flood risk when a spring tide concurs with a North Western storm. On average twice a year, such an event causes a big storm wave to be pushed from the sea in the river Scheldt. This water causes high water levels and a severe pressure on the Scheldt dykes. By lowering 8 kilometers of Scheldt dike, the top of the storm wave is cut off, allowing the water to flow into the designated area (600 ha) in a controlled manner. The creation of this flood control area is part of the Sigmoplan, that will support safety, environment, shipping and recreation along the Scheldt river.

When implementing the site, several local issues were taken into account. A local creek used to cause yearly flood events. By incorporating the Barbierbeek into the plans, sweet water will strengthen the quality of the tidal nature and the village will be better protected.

But safety is not the only benefit of this impressive project. The entire area will become a recreational park, harbouring a vast and unique swamp forest area, 150 ha of grassland bird area and 300 hectares of tidal nature.

Waterwegen en Zeekanaal N.V., the organisation managing part of the navigable waterways in Flanders, implemented an innovative method to allow the creation of mud flats and marshes in a lowlying polder. An inlet construction mimics the natural tidal movement. Twice a day, during high tide, the raising river water reaches 'tubes' in the inlet construction, that allow a reduced part of the flood water to flow into the area. At low tide, the water leaves the area through the outlet construction. This dynamic allows the creation of typical tidal landscapes, attracting hundreds of birds like the kingfisher and avocet.

Why is so much effort going into the creation of tidal nature? Mud flats and salt marshes are important parts of the river as they support the self-purification of the river system. The vegetation filters excess nitrogen from the water and allows for the uptake of oxygen into the water. At the same time, it enhances the development of plankton. Accordingly, flood control areas with tidal systems help to restore the basis of the food chain for innumerable plants and animals.



Restoring trust

Since this climate proofing concept was brand new for the inhabitants of the neighbouring municipalities, at first there were mayor concerns and protests against the plan. Thanks to thorough stakeholder management, the initial resistance was overcome. The local farmers who lost land in the polder, got maintenance contracts to transform their fields into grasslands, suitable for the specific birds the project wanted to attract. An information center provided a neutral meeting point for workshops and intensive dialogue. This way the government could restore trust with the local communities and develop common activities, such as tree planting days, open construction site visits, all accompanied by the project mascot, 'Xavier de Ree'.



Fig. 1: Tree planting activity with Dale the Deer



Fig. 2: Communicative map

Dr. David Parker (CEcol CEnv FCIEEM)

Secretary of Eurosite & Chair of Dee Estuary Conservation Group

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I am an Independent Consultant Ecologist now working largely in the voluntary sector. My scientific interests centre on the conservation and management of ecosystems and their component habitats and species. My ecological and environmental management career has been in environmental consultancy and a UK Government statutory agency, the Countryside Council for Wales, where I was Chief Scientist. I sat on the Chief Scientists' Group of the UK nature conservation agencies from 2004-2013. My voluntary roles are with professional institutes and NGOs, including Chair of the Dee Estuary Conservation Group and Secretary of Eurosite.



The importance of communication to the sustainable management of the Dee Estuary (Natura 2000 and Ramsar) UK

The Dee Estuary European Marine Site is located in the west-central part of the UK on the border between NE Wales and NW England. It is the sixth most important estuary in the UK for wintering and migratory waders and wildfowl with a 5-year peak mean of 130,254 birds. The Natura 2000 site covers 15,805 ha and consists of intertidal sand and mudflats, grazed and ungrazed saltmarsh and sand dunes. The estuary is owned by both public bodies and private owners, including TATA Steel and the Royal Society for the Protection of Birds (RSPB).

The Dee Estuary is a cross-border site with a number of regulators. Wales is a devolved administration with full responsibility for environment and nature conservation, whilst the UK Government is responsible for the English part of the estuary. Furthermore, at a local level, planning is devolved to three separate Local Government authorities around the estuary. Fisheries and shellfisheries are managed by three different government agencies and there are also three Harbour Authorities. The voluntary sector (Non-Governmental Organisations (NGOs)) are also playing an important role operating over the whole estuary, both as landowner (and therefore manager of parts of the estuary ecosystem) and as lobbyists.

The requirements of the Habitats and Birds Directives, the Water Framework Directive and the Bathing Waters Directive, have been the main drivers towards consistent policy making and regulation across the estuary. Unfortunately, in 2016 there are no public institutions that cover the whole of the Dee Estuary. This was not the case between 1992 and 2005 when all regulatory bodies cooperated with the production and implementation of the Dee Estuary Strategy. Unfortunately, this estuary-wide initiative was lost due to government cutbacks that began from 2005 onwards.

Since then, ensuring consistent governance over the whole estuary has been a major challenge and has relied on individual members of regulatory staff having effective channels of communication. However, this has not been completely effective and has led to inconsistencies

of regulation between the Welsh and English parts of the estuary, including fisheries, fracking/flue gas desulphurisation (FGD) exploration licences and planning policy. The long-term solution to the sustainable management of the Dee Estuary as a single ecological unit must be better communication between Government, its agencies and local communities, supported by a proactive NGO sector providing the estuary-wide perspective which is required.



Alexander Porschke

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Alexander Porschke was born in Hamburg on 22 January 1954. Since 2010 he has been President of the Nature and Biodiversity Conservation Union, NABU Hamburg. Previously he worked as a Freelance Consultant in Lima, Peru from August 2004 to July 2007. He was Senator for Environment in Hamburg from 1997 - 2001. From 1993 - 1997 Alexander Porschke worked as Parliamentary General Manager of the GAL in the Hamburg Parliament, Member of Environmental Committee. Until 1993 he worked in the nuclear affairs unit of the Hamburg Ministry of Environment, department supervision of industrial companies, concept and executive activities.



The long way to successful cooperation

Users and environmental nongovernmental organizations (NGOs) have always had different views on how estuaries should be treated and developed. In the past, public authorities have set their priorities according to the needs and wishes of the users. Today we have to deal with the result of this unbalanced approach: our estuaries are in a bad ecological situation. From the perspective of the environmental NGOs the users were full of ignorance about the needs of nature. This resulted in a relationship between users and NGOs which was dominated by confrontations and conflicts. The resulting lack of trust between the different stakeholders was hardly a surprise. But trust and mutual respect are the most important conditions for successful cooperation. Steps towards a better understanding of the respective points of view are:

- roadshows,
- transparent handling and exchange of information,
- information and joint consultations with a resulting protocol ("Dialog-Forum")
- information, joint consultation and recommendations ("Estuary partnership")
- information, joint consultation und decisions ("Elbe Habitat Foundation")

The last bullet point describes a current form of organization where mutual respect und mutual dependency help to develop a trustful cooperation. But even there it is difficult to cooperate, when the stakeholders have a confrontational relationship in other areas or concerning other topics.

To establish a trustful relationship it is essential that the NGOs as stakeholders have the same access to scientific expertise as the users and public authorities. They need to be able to participate at a multitude of meetings and expert discussions with a professional team.



Without a sufficient funding to enable the NGOs to partake on a professional level, the process will not yield the desired results.

So respect, trust and the ability to participate adequately are the main ingredients for good cooperation.



Other Speakers

Dr. Heike Markus-Michalczyk

Peter Symens

Natuurpunt - Service Management Policy Coordinator



Attendees

Martin **Abratis** | Federal Waterways and Shipping Administration

Annabelle **Aish** | Natural Heritage Service, French Natural History Museum

Dr. Jose Manuel **Álvarez Martínez** | Instituto de Hidráulica Ambiental de Cantabria IH Cantabria

Maiwenn **Barret-Marhic** | Direction Régionale Environnement Aménagement Logement de Normandie

Dr. Maik **Bohne** | Hamburg Port Authority

Nolwenn **Briand** | Direction Régionale Environnement Aménagement Logement de Normandie

Veerle **Campens** | Agency for nature and forests

Kristijan **Civic** | Eurosite

Beatrice **Claus** | Umweltstiftung WWF-Deutschland

Bastien **Coignon** | Ministère de l'Environnement de l'Energie et de la Mer

Marjan **Datema** | Ministerie van Economische Zaken

Tania **Davey** | Humber Nature Partnership

Dr. Thibaut **de Bettignies** | National Museum of Natural History

Helmut **Dieckschäfer** | NLWKN Brake-Oldenburg

Karin **Dubsky** | Coastwatch Europe

Laure **Dupechaud** | French marine protected area

Dr. Günther **Eichweber** | Federal Administration of Waterways and Shipping

Prof. Mike **Elliott** | Institute of Estuarine & Coastal Studies, University of Hull

Prof. Dr. Kay **Emeis** | Helmholtz-Zentrum Geesthacht

Claudia **Flecken** | Hamburg Port Authority

Dr. **Elmar Fuchs** | German Federal Institute of Hydrology

Hans **Gabányi** | Hamburg Ministry of Environment and Energie



Emma **Hawthorne** | Natural England

Dr. Wilfried **Heiber** | Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)

Edelgard **Heim** | Landesamt für Landwirtschaft, Umwelt und ländliche Räume Schleswig-Holstein

Jörg **Heinrichs** | Hamburg Port Authority

Gerd-Michael **Heinze** | NLWKN Brake Oldenburg

Gertrud **Heuer** | NLWKN Brake Oldenburg

Maike **Heuner** | Federal Institution of Hydrology

Dr. Boris **Hochfeld** | Hamburg Port Authority

Mrs. Gayle **Holland** | Marine Scotland

Stefaan **Ides** | Antwerp Port Authority

Dr. Klaus **Janke** | Hamburg Ministry of Environment and Energy

Kim **Jaspers** | Stiftung Lebensraum Elbe (Elbe Habitat Foundation)

Jens **Kappenberg** | Helmholtz-Zentrum Geesthacht

Maja **Karrasch** | Hamburg Port Authority

Dr. **Elisabeth Klocke** | Stiftung Lebensraum Elbe (Elbe Habitat Foundation)

François **Kremer** | European Commission

Dr. Markus **Küpker** | Wasserstraßen- und Schifffahrtsamt Hamburg

Dr. Yvonne **Leahy** | National Parks & Wildlife Service

Stefan **Lehrke** | Federal Agency for Nature Conservation, Germany

Dr. Heike **Markus-Michalczyk** | University of Hamburg

Jens **Marotz** | NLWKN Brake-Oldenburg

Manfred **Meine** | Hamburg Port Authority

Prof. Patrick **Meire** | Universiteit Antwerpen



Christian **Michalczyk** | Hamburg Ministry of Environment and Energy

Roger **Morris** | Bright Angel Coastal Consultants Ltd

Doris **Müller** | Hamburg Port Authority

Christina **Müller** | Federal Agency for Nature Conservation, Germany

Bernd-Ulrich **Netz** | Hamburg Ministry of Environment and Energy

Dr. Frank **Neumann** | IMIEU

Bárbara **Ondiviela** | Environmental Hydraulics Institute, University of Cantabria

Erik **Ooms** | s.Pro

Dr. David **Parker** | Dee Estuary Conservation Group (UK) / Eurosite

Dr. Juan-Pablo **Pertierra** | EU Commission DG ENV

Ir Yves **Plancke** | Flanders hydraulische research / Antwert port authority

Alexander **Porschke** | NABU Hamburg

Rob **Reintsema** | Het Groninger Landschap

Dr. **Lukasz Rejt** | General Directorate for Environmental Protection

Klaus **Rickert-Niebuhr** | Federal Waterways and Shipping Administration

Dr. Franziska **Rupprecht** | University of Hamburg

Eike **Schilling** | NABU Hamburg

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Hendrik **Schoukens** | Ghent University

Dr. Bastian **Schuchardt** | BioConsult Schuchardt & Scholle GbR

Angela **Schultz-Zehden** | s.Pro

Sandra **Silva** | EVOA - Tagus Estuary Birdwatching and Conservation Area

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Lucie **Trokanova** | NEEMO EEIG, LIFE Programme External Communications Team

Robbert **Trompetter** | Zeeland Seaports

Bernd **Vaessen** | WSA Cuxhaven

Dr. Gunther **Van Ryckegem** | Research Institute for Nature and Forest

Stefan **Versweyveld** | Eurosite

Robbert **Wolf** | Port of Rotterdam

Dr. Kirsten **Wolfstein** | Hamburg Port Authority



General Information

Conference venue

Behörde für Umwelt und Energie
Neuenfelder Straße 19
21109 Hamburg
Public Transport: Metro Lines S3 / S31 (Stop: Wilhelmsburg)

Registration desk

The registration desk is located in the foyer of the conference center (1st floor). It is opened on Thursday from 9.15 a.m. to 7.30 p.m. and on Friday from 8.30 a.m. to 5 p.m.

Cloakroom

The cloakroom is located at the registration desk. It is opened during the conference programme. Lockers are available next to the registration desk.

Working Room

You can find a working room which is equipped with desks and electrical sockets in room E.01.274 (1st floor).

Your presentation

Please hand over your presentation at least one hour before the start of your session at the registration desk.

Catering

In room D.01.263 (1st floor) we provide you with snacks and drinks during breaks.

Internet

If you need a personal internet access, please refer to the registration desk.

Meeting point for the field trip

The meeting point for the field trip will be in the main conference room (1st floor) at 3:45 pm.

Contact to the organising team

Phone: +49 (0)151 72 68 14 54 (mobile) or +49 (0)40 428 40 83 44 (office)

Taxi

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Emergency

In case of injuries, please contact the registration desk.

Phone numbers:

Fire department and ambulance: 112

Police: 110



Imprint

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