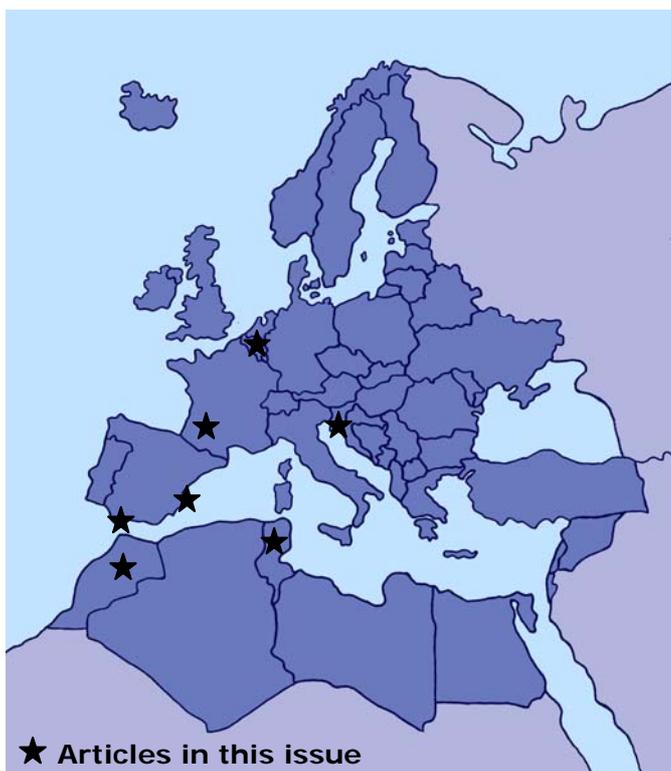


The Network has had a busy year so far with a new logo, a new website, the publication of the Pond Manifesto and the 3rd EPCN conference, which took place this May in Valencia, Spain.

As you can see we have also started a newsletter and we would like this to be an opportunity for pond researchers and practitioners to communicate across the whole of Europe and North Africa. Please see www.europeanponds.org for information on newsletter submissions.

This newsletter is for both EPCN members and non-members, and anybody can download it from our website – please help us raise awareness of pond conservation issues by sending this newsletter to your colleagues and contacts and encouraging pond workers to join the network.



Contents

In this first issue of the Newsletter we have articles from countries both north and south of the Mediterranean, and even from as far away as South America. So, read on about...

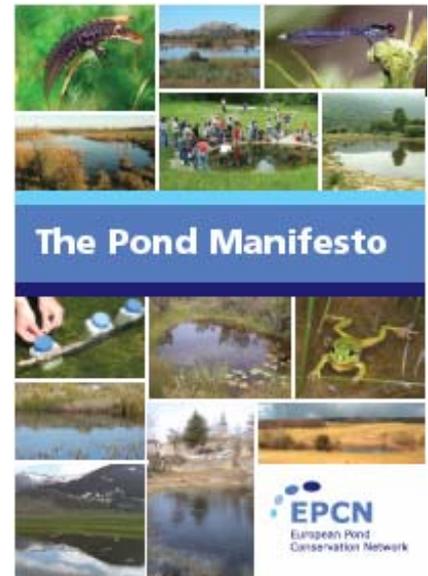
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The activities of the EPCN's Pro-pond Project

The Pro-pond project, supported by the MAVA foundation, started at the beginning of 2008 and aims to provide a major stimulus for pond conservation across Europe and North Africa.

Pond Manifesto

The English version of the Pond Manifesto can be downloaded from www.europeanponds.org. Please send it to your contacts in national or regional water and conservation agencies. German, French, Spanish and Italian versions are also being produced, and will be available to download from the EPCN website over the next few months.



Workshops

Workshops on 'pond management success stories' and 'linking pond management to scientific knowledge' took place at the 3rd EPCN Conference. Both workshops were oversubscribed, showing the importance of these issues. A summary of each workshop will be available in the next issue of the newsletter (Autumn 08).

We need your contributions for...

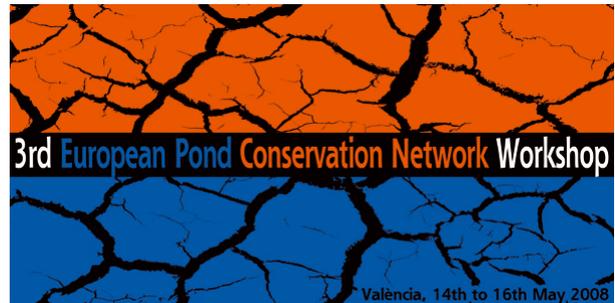
The Pond Typology, which will help define the main pond community types in Europe and identify data gaps. EPCN members were emailed in June with a questionnaire to identify available pond data in the Mediterranean Region and the Alpine Arc. Your contribution is much needed, so please return the questionnaire or contact Régis Céréghino (cereghin@cict.fr) or Arthur Compin (compin@cict.fr) for further information.

The Important Areas for Ponds assessment, which seeks to identify ponds or groups of ponds of high biodiversity importance, starting with the Mediterranean Basin and the Alpine Arc. You can help by providing data or expert knowledge. Watch out for further information via email or contact Pascale Nicolet (pnicolet@pondconservation.org.uk).



The EPCN's 3rd Conference, Valencia, May 2008

The 3rd EPCN International Conference took place this May in Valencia, Spain. The event was organised by the Conselleria de Medi Ambient, Aigua Urbanisme i Habitatge of the Generalitat Valenciana (Regional Government of the Valencian Region, Spain). Thanks again to the organisers for their hard work and a very successful conference.



The conference was attended by over 150 delegates from about 20 countries. Attendees included a wide range of both pond researchers and practitioners.



The programme of this 3-day conference included approximately 40 oral and 100 poster presentations. The book of abstracts, which also includes the conference programme and the delegate list, can be downloaded from the conference website (see www.lifeanfibios.com/epcn).

Conference topics included:

- Management and conservation in practice
- Pond ecology at different spatial scales
- Temporary ponds.

Three keynote speakers were invited to the conference:

- John Downing: Little things mean a lot: the emerging role of small lakes and ponds in the global carbon cycle;
- Luc Brendonck: Living "on the rocks";
- Mario Garcia-Paris: Role of Mediterranean ponds preserving high levels of genetic diversity in amphibians.

Three workshops were organised on the last day of the conference:

- Pond management success stories;
- Linking pond management to scientific knowledge;
- Conservation of habitats for amphibians.

The conference closed with a lavish dinner and a party at a local venue. The excursion that followed the next day included a visit to the Albufera Natural Park. The excursion lunch once again demonstrated the legendary Spanish hospitality!

Papers from the conference will be published in 2009 in special issues of *Hydrobiologia* (deadline for submission 30 September 2008) and *Limnetica* (deadline for submission 31 December 2008). Please visit www.lifeanfibios.com/epcn for further information.



Hidden Treasure Ponds: Armagnac ponds may soon become Ramsar 'wetlands of international importance'

Tobias Salathé, Ramsar Convention on Wetlands, www.ramsar.org

What comes to your mind when reading the word "Armagnac"? A world famous brandy? Gentle slopes with varied cultures in a rural area of France, famous for its culinary traditions? Or an agricultural landscape embedded in a web of heaths, woodlots and fishponds? Maybe you should focus on the latter as key for sustainable development in this area.

Ponds retain freshwater for irrigation and to water cattle. Ponds absorb floodwater, capture sediment and nutrients. Ponds also provide abundant fish resources. The regional biodiversity hotspots are linked to ponds, especially if surrounded by shallow riparian zones, flood-prone meadows and areas of wet woodland. The population stronghold of the European pond terrapin (*Emys orbicularis*) in the Armagnac ponds is a strong argument for their designation as a "wetland of international importance" for the Ramsar Convention, currently in preparation by the local authorities.



The pond terrapin

<http://cache.eb.com/eb/image?id=38579&rendTypeId=4>

However, these are exceptional circumstances. Not many of the 10 million ponds or so across Europe are receiving similar attention. Most European ponds were lost, drained, filled in, or simply forgotten, despite the cultural heritage they represent and the habitat they provide for many rare species.

How many European or national policies and development strategies are taking into account the services provided by pond ecosystems? It is more likely that ponds are simply forgotten, because of their small size, ubiquitous nature or degraded state. But the time has come to address these issues, to create awareness, to increase understanding and to promote pond restoration and conservation activities throughout Europe. Since its establishment in 2004, the European Pond Conservation Network has been able to federate members in 16 countries. The Convention on Wetlands, signed at Ramsar in 1971, is willing to support your efforts and to help disseminate your expertise and proposals. Back in 2002, the Ramsar contracting parties adopted guidance for identifying, sustainably managing and designating temporary pools for the Ramsar List (cf. www.ramsar.org/res/key_res_viii_33_e.pdf). This was a promising start. A similar approach may now focus on all different types of European ponds. Hopefully the case of the Armagnac ponds will trigger comparable activities in many other parts of Europe. There is a lot to do, let's take up the challenge.

The temporary ponds of Doñana: conservation value and present threats

Díaz-Paniagua C., Fernández-Zamudio R., Florencio M., García-Murillo P., Gómez-Rodríguez C., Siljestrom P. and Serrano L.

The Doñana National Park is given the highest degree of environmental protection in Spain as it has been designated as a Ramsar Site, a Biosphere Reserve, a Special Protection Area for birds, and a Natural World Heritage Site. Nevertheless, it is located in an area with a wide variety of pressures due to the exploitation of water resources. The intensification of agriculture, urban growth, and the development of tourist resorts on the fringe of this protected land has long threatened the conservation value of the Doñana National Park and has, consequently, added this park to the Montreux Record of Ramsar Sites under threat in 1990.

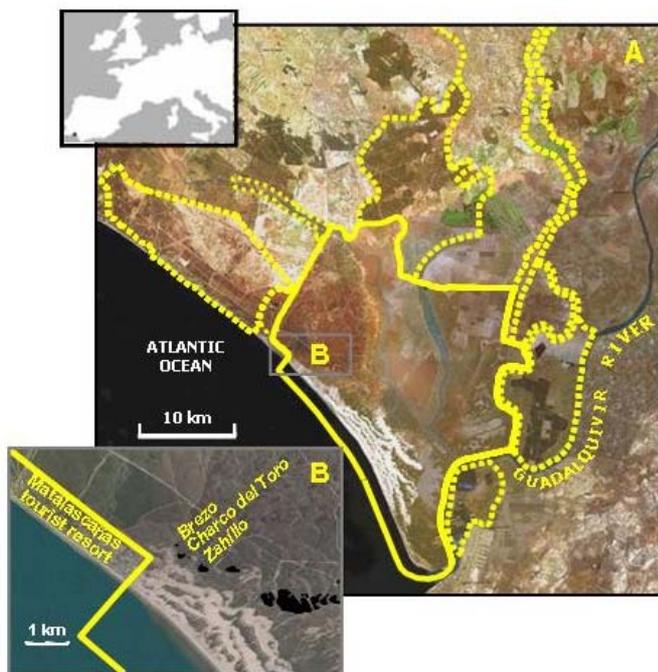


Fig. 1. A). Several territories within the Doñana region (SW Spain) are protected by law from hunting, drainage, forestry plantation and excessive tourist exploitation, such as the National Park (solid line) presently covering 54,570 ha, and the Natural Park with over 50,000 ha (dashed line). **B).** Location of some ponds (filled in black) closer to Matalascañas tourist resort.

About one half of the total extension of the National Park is occupied by a continental marshland (Figure 1A). Compared to this vast area, small temporary ponds have

often fallen short of the due attention. Over 3000 temporary ponds of natural origin are formed when the water-table rises during wet years¹. They are located on aeolian sandy soils and fed by freshwater (rainfall, runoff and groundwater discharge)². Ponds range widely in size, and in flooding duration from rain puddles to shallow lakes which occasionally dry out after years of severe drought. The high density and heterogeneity of ponds form a robust network that favours dispersal and reproduction of their associated fauna and flora, even in years of scarce rainfall when the number of temporary ponds is considerably reduced^{1,3}. The Doñana temporary ponds support a rich aquatic biota with several endemic species to the Iberian-Balear region and one rotifer only known to Doñana (*Lecane donyanaensis*)⁴. They provide the optimal breeding habitats



Dulce pond (Doñana National Park)

for eight of the eleven amphibian species of this area⁵. About 40% of brachiopods distributed across Spain can be found in the Doñana temporary ponds, as well as three of the most endangered aquatic macrophytes in Spain (*Callitriche lusitanica*, *Hydrocharis morsus-ranae*, *Lemna trisulca*, *Thorella verticillatinundata*, *Ricciocarpos natans*, *Wolffia arrhiza*, *Zannichellia obtusifolia*)⁶.



Lecane donyanaensis
(photo: N. Mazuelos)

Since 1990, several studies have pointed out that groundwater discharge to some Doñana ponds has been damaged. The causes of groundwater damage to these ponds have been reported to be multiple due to the interaction of many factors, such as pond altitude, basin morphometry, plant transpiration, local hydraulic permeability, and groundwater abstraction by a tourist resort with a pumping area located at less than 1 km away from some ponds^{7,8,9,10} (Figure 1B). In 1992, an International Expert Commission has already urged for the implementation of a plan to sustainably use water resources in the area,

and suggested the relocation of the pumping area 1 km further from the ponds¹¹. But this sustainability plan was not followed. At present, some ponds have aquatic phases reduced by 3-months during wet years (Zahillo and Charco del Toro ponds) and even fail to fill at all during average rainy years (Charco del Toro and Brezo ponds)¹². The cumulative effect of scarce rainfall and reduced groundwater input adds more concern for the future of these ponds.

Finally, the recent signs of eutrophication in some ponds and the introduction of exotic invasive species, such as *Procambarus clarkii* and *Azolla filiculoides*¹³ may also contribute to the decline of native species. In our view, the Doñana ponds urgently require a specific management strategy that clearly addresses these threats and, in particular, the exploitation of urban water in the nearby tourist resort where the groundwater pumping area should be relocated, and water restrictions implemented during dry years.

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¹³ García_Murillo et al. 2007. *Limnetica* 26: 243-250.

Links to some related institutions

<http://reddeparquesnacionales.mma.es/en/parques/donana/index.htm>,

<http://www.ebd.csic.es/>, <http://www.ciecem.uhu.es/>, <http://www.irnase.csic.es/>

<http://www.turismodedonana.com/>, <http://www.donana.es/>

<http://www.unesco.org/mab/pub.shtml>

Garâa Sejenane (northern Tunisia): an unknown and threatened biological richness

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The coastal region encompassing northwestern Tunisia and the adjacent northeastern Algeria, traditionally called Numidia, harbours exceptionally diversified wetlands including numerous temporary ponds. Despite some earlier research (e.g.^{1,2,3,4,5,6}), they are still largely unknown and often seriously affected by increasing agriculture, grazing and draining. Their alarming situation motivated a recent research program in northwestern Tunisia (PHC Egide-CMCU 2007-2010) and a PhD thesis (H. Ferchichi, in preparation), in collaboration between the Universities of Tunis and Montpellier. The objectives are (1) to evaluate the present-day state and diversity of the wetland plant communities, (2) to study their ecological functioning, in relation to human practices, and (3) to explore their origin and past dynamics through palaeoecological analyses.



Garâa Sejenane plain, viewed from its southeastern extremity. The central part of the depression is cultivated and pastured, and the surrounding hills are covered by degraded forests of *Quercus suber* (SDM, 22.04.2008).

The investigations concentrated on the vast plain of the Mogods region, the so-called Garâa Sejenane, previously described as a temporary lake of 3 x 6 km, bordered by a 100 m-wide *Isoetetum velatae*, and occupied in its centre by a marsh of *Schoenoplectus lacustris*^{2,7}. This exceptional site then harboured a number of rare and endangered species, and constituted the only Tunisian locality of some of them⁸: *Butomus umbellatus*, *Coleostephus paludosus*, *Exaculum pusillum*, *Helosciadium crassipes*, *Juncus heterophyllus*, *Lythrum borysthenticum*, *Mibora minima*, *Myriophyllum alterniflorum*, *Myosotis sicula*, *Nymphaea alba*, *Polygonum amphibium*, *Utricularia gibba*, *Utricularia vulgaris*.

Three years of botanical investigations (2006-2008) lead us to assess the strong decline experienced over the past fifty years by Garâa Sejenane, which today consists of a drained, pastured and cultivated plain. Wetland plant communities are

now limited to small patches, isolated within pastured zones characterised by *Asphodelus ramosus* (= *A. microcarpus*), anthropogenic meadows⁹ and temporarily inundated cultivated fields. However, despite their division, they still harbour most of the plants previously noted, and two species newly discovered in Tunisia: *Pilularia minuta* and *Crassula vaillantii*. *P. minuta* is abundant, and develops as well on margins of *Bolboschoenus maritimus* marshes, as in *Isoetes velata* pools, in *Nicotiana tabacum* fields, and even in wheel tracks. While surprisingly recently discovered, this population undoubtedly constitutes the largest known population of this rare Mediterranean Pteridophyte, and gives hope for its conservation¹⁰.

Our botanical surveys also allowed the identification of seven species of Charophytes (*Chara braunii*, *C. connivens*, *C. oedophylla*, *C. vulgaris*, *Nitella flexilis*, *N. opaca* and *Tolypella glomerata*). Except for the cosmopolitan *Chara vulgaris*, these taxa are remarkable among the flora of Tunisia. Finally, Garâa Sejenane comprises one of the easternmost peat-forming wetlands, previously only described from the Kroumirie and Annaba region in Algeria¹¹. This small habitat, which does not exceed 0.5 ha, revealed several interesting species such as *Anagallis crassifolia*, *Bellis prostrata* (= *B. repens*), *Hypericum afrum*, *Isolepis pseudosetacea*, *Ludwigia palustris*, *Osmunda regalis*, *Pteridium aquilinum*, *Ranunculus hederaceus* and *Solenopsis bicolor*.

These studies should provide concrete insights in terms of conservation management, both in the short and long terms. They notably should allow for the evaluation of the impact of recent human activities on wetland plant populations, and proposing a protection status for certain zones particularly rich and/or well preserved. The ideal would be to reduce agricultural practices and grazing on selected parts of Garâa Sejenane, in order to preserve the most representative communities of this exceptional temporary wetland.

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Climate change and temporary flooded pools in Morocco

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Introduction

Mediterranean temporary pools are wetlands characterised by alternating flooded and dry phases during the annual cycle. Although they are distributed all over the Mediterranean basin, temporary pools are more frequent in its western part and especially in Morocco where they are found in most of the country under the arid to humid Mediterranean bioclimates, from the Atlantic plains, to the mountainous areas of the Rif, Moyen-Atlas and Haut Atlas, until the Eastern High Plateau.



Rich and diversified but vulnerable habitats

The temporary pools in Morocco are considered as the richest in North-Africa with high conservation value for both plant and animal species. The richness is high at the local level (individual pool) in relation to the ecological conditions favouring small species with short life-cycles. It is high also at the regional level resulting from the wide diversity in ecological characteristics such as size, depth, origin and human uses. The exceptional richness of these habitats

is threatened by their fast destruction under the combined effects of many threats, among which the most important are urban development and the intensification of agriculture. Climatic changes probably enhance their vulnerability although the direct impacts remain difficult to predict at present.

Expected impacts of climate change

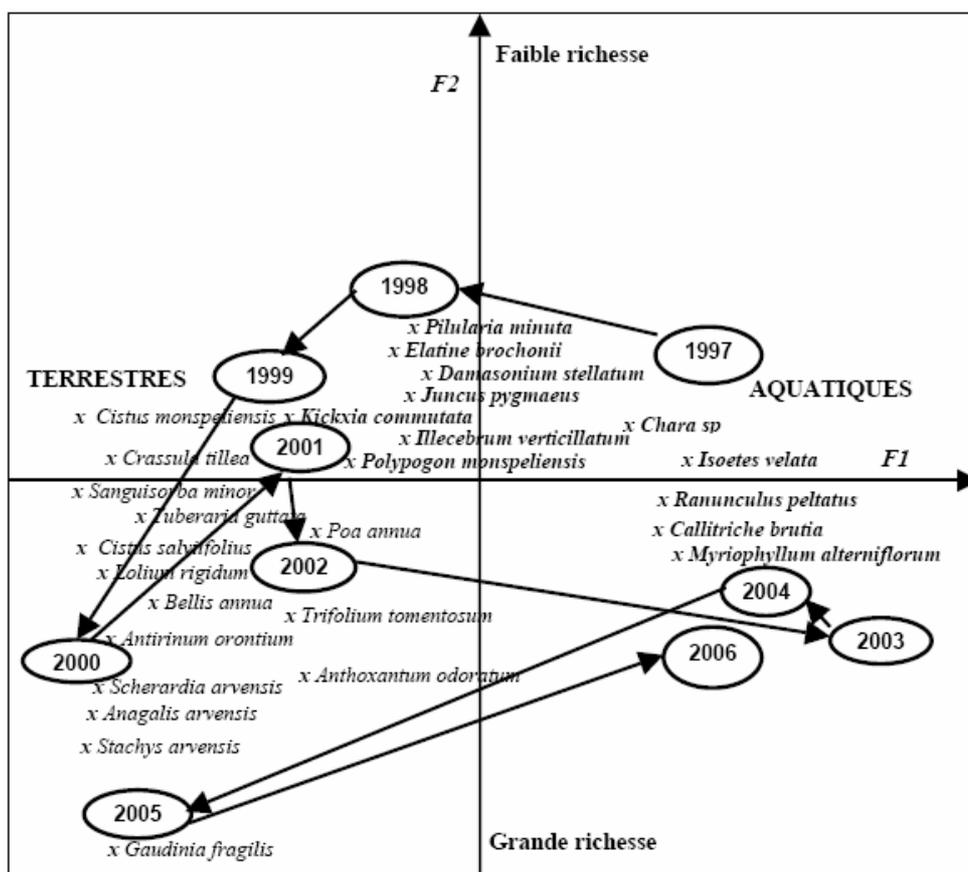
The models of climate change forecast generally in Morocco an increase of temperature and a reduction in the annual rainfall along with an increase of the frequency and intensity of droughts in the East and West of the country. These changes, and especially the changes in the rainfall regime, will probably have important impacts on the poorly buffered ecosystems of temporary pools. The detailed consequences of climate change remain difficult to predict because of the insufficient knowledge of the biology of the species and their responses to environmental changes. The most likely impacts of climate change on temporary pools in Morocco are the following:

- A decrease of water volume and thus of the duration of flooding and of the dates of flooding and drying out, which are important ecological drivers. The impact on the pools located in the East and South of the country would be the highest. The impact would be lower on mountain pools which experience longer hydrophases resulting from higher and less variable rainfall.

- Changes in the species composition of flora and fauna (especially amphibians) with a decline of the species with the highest water requirements, and in the timing and duration of flooding and an increase in the cosmopolitan species with short and plastic life-cycles.
- An impoverishment of the biodiversity of coastal pools resulting from their salinization.
- A decline of rare species resulting from an increase in the fragmentation of their populations.

A 10-year monitoring of the vegetation of a temporary pool in Western Morocco showed large inter-annual variations in the species composition in close relationship with rainfall (axis 1, see Figure below) and a gradual change in the species composition (axis 2). Stunted amphibious species such as *Elatine brochonii* and *Pilularia minuta* showed populations widely fluctuating between years increasing the risk of stochastic extinction.

The high resilience of ecosystems to the characteristic droughts of the Mediterranean climate could buffer the impacts of climate change on the temporary pools in Morocco. However, the direct and indirect impacts of human activities will probably increase the changes in the hydrology and the vulnerability of the ecosystems. The conservation of the pools needs increasing awareness of both people and decision makers of the functions and values of temporary pools in Morocco and the implementation of conservation measures for the pools and their close catchments.



10-year dynamics of the vegetation in a temporary pool in Western Morocco showing on the biplot 1/2 of a Correspondence Analysis for each year the location of the barycentre of the distribution of the 80 relevés; 1997, 2003, 2004 and 2006 were Wet years and 1998, 1999, 2000, 2001, 2002, 2005 were dry years.

Profile on: Steven Declerck, Researcher, Leuven University (Belgium)



Metacommunity ecology is a rapidly expanding field in community ecology that is increasingly influencing current thinking about communities, biodiversity, ecosystem functioning and conservation biology. My main research topic at the Laboratory of Aquatic Ecology and Evolutionary Biology (Katholieke Universiteit Leuven, Belgium; <http://bio.kuleuven.be/de/dea>; research group of Luc De Meester) is focused on how metacommunity dynamics can affect the structure, biodiversity and trophic interactions of aquatic food webs (funded by the Research Foundation – Flanders; FWO-Vlaanderen). My research strategy is based on a combination of field surveys with an experimental approach using mesocosms. During my current stay at the laboratory of Jon Shurin (University of British Columbia, Vancouver, Canada), we experimentally tested theoretical predictions about the effect of the interaction between environmental heterogeneity and dispersal intensity on the spatial architecture of biodiversity at the metacommunity level (alpha, beta and gamma diversity), simultaneously using zooplankton and bacteria as model systems (the latter in co-operation with Blake Matthews and Curtis Suttle). I am also involved in research on the analogy between metacommunity and metapopulation dynamics (e.g., species sorting *versus* natural selection, dispersal *versus* gene migration) and on the potential feedbacks between ecological and micro-evolutionary processes (PhD-project of Sarah Rousseaux, in co-operation with L. De Meester). Furthermore, I co-supervise experimental work on how metacommunity processes affect interactions among *Daphnia* host populations and their parasites (PhD-project of Dino Verreydt, in co-operation with E. Decaestecker and L. De Meester).



One of the ponds surveyed as part of the MANSCAPE project (photo: Tom de Bie)

One of my major interests also lies in the study of extant patterns of biodiversity in natural aquatic systems^{1,2,3,4}, how such patterns are shaped by local natural and anthropogenic factors² and metacommunity dynamics, and how knowledge of these patterns and dynamics can be used in the development of effective conservation and management schemes. In this context, I was strongly involved in the BELSPO-project MANSCAPE, that focused on the relation between land use and biodiversity in small farm land ponds⁵. Together with Tom De Bie, who is currently finishing a PhD-thesis on

zooplankton community structure in small ponds in relation to age, landscape structure and environmental characteristics, I am also strongly engaged in the nationally funded BELSPO project PONDSCAPE ('Towards a sustainable management of pond diversity at the landscape level'; promoter: Koen Martens, R.B.I.N.S.), a large scale project aimed at revealing patterns of landscape biodiversity in a large number of small ponds, applying a spatially hierarchical sampling design. This project will yield insights in the spatial architecture of pond biodiversity at the national

level, which is a prerequisite for efficient conservation planning. In collaboration with other research groups, we focus on several groups of aquatic organisms simultaneously (including bacteria, phytoplankton, phytobenthos, zooplankton, macro-invertebrates, macrophytes, amphibians and fish), and seek to explain patterns of occurrence and diversity of these groups by landscape connectivity, the organisms' dispersal abilities, and natural and anthropogenic factors. In addition, an important work package of the PONDSCAPE project evaluates alternative pond management techniques via whole-pond experiments in the bomb crater area of Tommelen (Belgium).



Steven Declercke and Tom de Bie sampling ponds as part of the MANSCAPE project

I also co-ordinate the research project 'Development of a sustainable integration of fish farming and nature values in protected areas' (TWOL-project of the Flemish Government). This project combines a socio-economic analysis with ecological data in order to reconcile fish farming practices with nature conservation, and has a strong focus on the resolution of conflicts that arise from cormorant predation, eutrophication and the practice of fish stocking. A major scientific aim of this project is to experimentally evaluate the direct and indirect effects of cormorant predation on aquatic food web structure and functioning (PhD-project of Pieter Lemmens).

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The Pôle-relais Mares et Mouillères de France: the French pond network

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Wetlands became a major issue in France in the early eighties with their first evaluation by the means of public policies. The report, written by the prefect Paul Bernard in 1994 pointed out the huge deterioration of wetlands in France while highlighting the importance of functions they were fulfilling. He particularly showed the negative impact of the absence of a global and coherent policies on these ecosystems. Finally a national plan for wetlands (PNAZH, Plan National d'Action pour les Zones Humides) was adopted in 1995 by the government which aimed at developing actions to stop their deterioration. The first action was a five years research plan (PNRZH, Plan National de Recherche sur les Zones Humides) that lasted between 1997 and 2001 in which many interdisciplinary teams were involved. At the same time, a national observatory of wetlands was created (ONZH, Observatoire National des Zones Humides). Then, in 2002, the "Pôle-relais" plan of action was launched. Six of these "pôles" or networks were created in order to cover all kinds of French wetlands (Mediterranean lagoons, atlantic marshes, peat-bogs, ponds (small and big ones) and alluvial valleys).

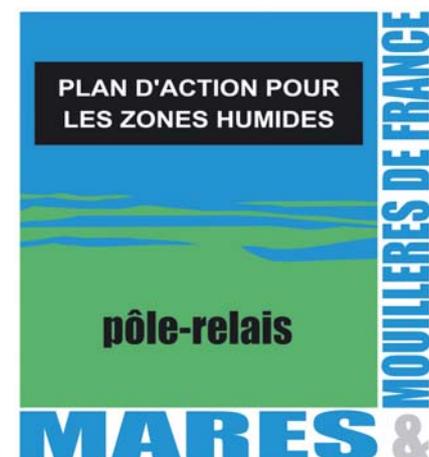
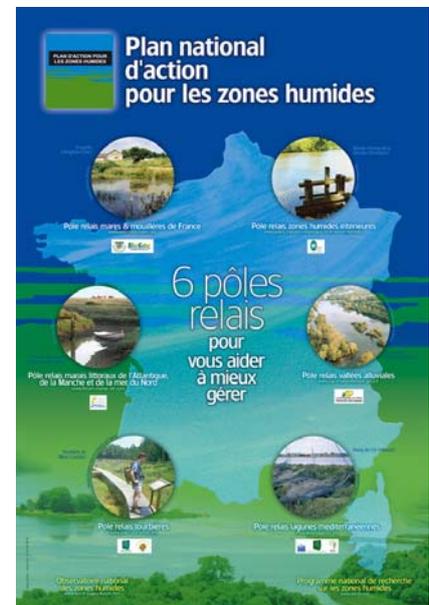
All "pôles-relais" share the same three main objectives:

- Collecting and putting at people's disposal the knowledge of all aspects of wetland management;
- Promoting sustainable management of wetlands by helping and supporting local practitioners or politicians;
- Contributing to national policies on wetlands.

Therefore, functioning of each "pôle" is quite different because each of them is led by a different organisation. Indeed, the French network is composed of a national head and actually 12 regional relays (covering more than half of France). These regional relays coordinate actions at the level of their territory which multiply the impact of the "pôle" objectives. Thus, specific problems met by practitioners on the ground can be highlighted in the network and then identified at a national level.

The heart of the French network is its website (www.pole-mares.org) in which all documents related to French ponds, dates of events, network newsletters can be found. Moreover, a bibliographic database can be consulted online and documents freely lent for a period of 15 days. A discussion forum has also been launched in September 2007 in order to stimulate exchanges between practitioners and scientists who work on ponds.

Although the "Pôle-relais" is very appreciated by people who work on wetlands, our future is not assured because of the recent evolution of governmental policies. As far



as the future of pond conservation is concerned, a new “Pôle-relais” should be created in the months to come in which small and big ponds should be grouped along with alluvial valleys. This new entity could be a good option to ensure the conservation and protection of small continental wetlands in France. Updates to follow...!

Websites:

- Pôle-relais Mares www.pole-mares.org
- A regional network (groupe MARES Nord – Pas de Calais) www.groupemares.org
- National wetlands observatory (ONZH) <http://www.ifen.fr/acces-thematique/territoire/zones-humides/onzh.html>
- National wetlands research Plan (PNRZH) <http://www.ecologie.gouv.fr/-PNRZH-.html>

From Pond Emergency to Pond Fashion: an international case-study of pond marketing in Trieste (Italy)

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The landscape around the city of Trieste (Northeastern Italy) consists mainly of a dry and stony karstic plateau, traditionally given over to cattle and sheep rearing. Ponds around Trieste have been managed for centuries, assuming a peculiar ethnographic value. After 1950 their number started to decline rapidly, mainly due to their loss of "economic interest". To protect these habitats, back in 1965, began the first pond project,



with the publication (by the Trieste Natural History Museum) of a catalogue of local wetlands¹. So, in those years, with the publication of studies about pond history², flora³ and fauna⁴, the first European group for pond study and protection was founded in Trieste.

A karstic pond

In 1974 the first restoration of a pond with the sole aim of protecting its biodiversity was carried out⁵. Nevertheless the situation was dramatic, with the loss of almost 80% of the ponds⁶ and a situation that did not seem easy to change due to the almost complete disinterest of the public and local farmers⁷.

To prevent the disappearance of all the ponds from its territory, in the '90's the Trieste Natural History Museum began a new conservation plan⁸ that consisted in: pond restoration; eradication of alien species; pond construction (testing different materials); reintroduction of autoctonous species; research and monitoring; and (last but, definitely not least) **popularisation and environmental marketing**^{9,10}.



Pond conservation training course

In 2001 the Museum also started a course in: "Conservation and Management of Small Freshwater Wetlands" and in 2005 it hosted the international meeting: "Ponds, Puddles and Pools" (3 days with more than 120 people from 11 countries). Every year around 30 people attend the course and now, thanks to them, similar pond protection initiatives are spreading in Italy (the Regions of Friuli Venezia Giulia, Liguria, Lazio, Emilia Romagna, Piemonte) and across the borders to Slovenia and

Croatia. The results of these pond conservation projects are particularly evident in the neighbouring Slovenian

Karst, where, in just 3 years dozens of ponds have been restored directly by farmers and hunters¹¹.

In the meantime in Trieste the awareness of pond protection is nowadays so spontaneous and widespread that it becomes a sort of “fashion”, no longer under scientific control, with some interesting but doubtful results. For instance, in the last municipality election both mayoral candidates put “pond protection” in their electoral programmes. One large and famous local winemaker makes claims for the “biological quality” of his wines, describing the “ponds present around his vineyards”. It is also the case that in the Karst of Trieste nowadays every project of environmental restoration and/or implementation cannot leave out the creation of some new ponds in the stated aims.



The mayor of Trieste

Unfortunately some of these ponds are created or managed by groups lacking in experience or by unmanaged volunteers that misunderstand what they learnt on the Pond Course. This lead to negative results such us the alteration of some ecosystems (due to the “overmanagement” of ponds and species) or a negative impact on public opinion created by a “non-functioning pond” (= plenty of vexing mosquitoes, rotten algae or exotic goldfish).

Nevertheless, the balance is still very positive and the extinction trend of pond environments (and of pond importance awareness) has, at the moment, finally stopped, if not actually inverted.

Acknowledgments

Igor Maher kindly gave the data for the Slovenia ponds. Paul Tout definitely improved the English text.

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