February 2011 – BioFresh News



Newsletter

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Nature's Backbone at Risk

Extract from the IUCN press release of a Science paper in which BioFresh was involved

The most comprehensive assessment of the world's vertebrates (mammals, birds, amphibians, reptiles and fishes) confirms an extinction crisis with one-fifth of species threatened. The results show that, on average, 50 species of mammal, bird and amphibian move closer to extinction each year due to the impacts of agricultural expansion, logging, over-exploitation, and invasive alien species. "The 'backbone' of biodiversity is being eroded," said the great American ecologist and writer Prof. Edward O. Wilson, at Harvard University. "One small step up the Red List is one giant leap forward towards extinction. This is just a small window on the global losses currently taking place.

Southeast Asia has experienced the most dramatic recent losses, largely driven by the planting of export crops like oil palm, commercial hardwood timber operations, agricultural conversion to rice paddies, and unsustainable hunting. Parts of Central America, the tropical Andes of South America, and even Australia, have also all experienced marked losses, in particular due to the impact of the deadly chytrid fungus on amphibians.

Whilst the study confirms previous reports of continued losses in biodiversity, it is the first to present clear evidence of the positive impact of conservation efforts around the globe. Results show that the status of biodiversity would have declined by nearly 20% if conservation action had not been taken. The authors caution that their study represents only a minimum estimate of the true impact of conservation, highlighting that some 9% of threatened species have increasing populations. Their results show that conservation works, given resources and commitment. They also show that global responses will need to be substantially scaled up, because the current level of conservation action is outweighed by the magnitude of threat. In this light, policymakers at the CBD meeting in Nagoya have been calling for a very significant increase in resources to make the objectives of the Convention achievable.

"This paper is proof that conservation is working. Now we have to scale-up our efforts to match the unprecedented threats faced by the natural world," said Prof. Jonathan Baillie, Director of Conservation Programmes at the Zoological Society of London and an author on the paper.

The study involved some 174 authors from 115 institutions and 38 countries (published in Science*xpress* on October 26th, 2010). It was made possible by the voluntary contributions of more than 3,000 scientists.

provided by Jörg Freyhof, IGB

Continuing biodiversity loss predicted, but could be slowed

Extract from the DIVERSITAS press release of a Science paper, in which a BioFresh partner was involved

A new analysis of several major global studies of future species shifts and losses foresees inevitable continuing decline of biodiversity during the 21st century but offers new hope that it could be slowed if emerging policy choices are pursued.

Led by experts Henrique Miguel Pereira and Paul Leadley, the 23-member scientific team from nine countries, under the auspices of DIVERSITAS, UNEP-WCMC and the secretariat of the CBD compared results from five recent global environmental assessments and a wide range of peer-reviewed literature examining likely future changes in biodiversity. Published December 10th in the journal Science (Science 330, 1496-1501), the analysis found universal agreement across the studies that fundamental changes are needed in society to avoid high risk of extinctions, declining

populations in many species, and large scale shifts in species distributions in the future. The authors say the creation of an Intergovernmental Panel on Climate Change (IPCC) – like mechanism for biodiversity (to be called the Intergovernmental Platform on Biodiversity and Ecosystem Services, IPBES) - is "extremely important" for achieving commonly-agreed definitions and indicators for biodiversity and to inform decision making.

Among the key issues is the lack of consensus defining the length of time involved in species' extinction – which may be decades or millennia – leading to "considerable uncertainty in models and substantial disagreement within scientific community concerning the likelihood of massive extinctions over the coming century". Furthermore, the researchers note that changes in species distributions and population sizes should receive more attention because they are likely more critical to human well-being and better short-term indicators of the pressures of humans on ecosystems.

provided by Thierry Oberdorff, IRD



Networking between BioFresh and NCCARF in Australia A report of BioFresh member Martin Kernan

During the summer I attended the National Climate Change Adaptation Research Facility (NCCARF) 2010 Climate Adaptation Futures Conference in the Gold Coast, Australia



Martin Kernan presents BioFresh in Melbourne.

www.nccarf.edu.au/ccconfer-() ence2010). In addition to the seminars I gave in Melbourne and Canberra (with some slides summarising BioFresh) I was invited to attend a Freshwa-Biodiversity Adaptation ter Workshop (> www.nccarf.edu. au/water/). This was a scientific workshop focusing on climate change adaptation and freshwater biology. The group, comprising around 30 scientists from around Australia as well as two international visitors (David Dudgeon from the University of Hong Kong and myself) selected 3 major topics for discussion: 1. refuges, 2. temperature and 3. flows. Small groups

worked on each of these topics to develop outlines of synthesis papers and information sheets, which will be made available to network members via the network website later in the year. A follow-up workshop to assess the development of adaptation strategies arising from these syntheses is planned for 2011. During the meeting I highlighted some of the key components of BioFresh, in particular the synthesis papers planned from the project and the value of the data portal. I will continue to provide a link between this network and BioFresh.

Martin Kernan, UCL

An insider's view of CBD COP 10, Nagoya, Japan BioFresh member Hendrik Segers attended the Nagoya Meeting



After the failure of the last UN-FCCC Conference of the Parties in Copenhagen in 2009, many observers worried that this marked a general lack of confidence in the effectiveness of intergovernmental processes to deal with environmental issues. Moreover, the stakes for the 10th Conference of the Parties of the Convention on Biological Diversity were unusually high, which was neither an element that inspired much confidence. This 10th Conference of the Parties, or, short, COP 10, had to consider a relatively large number of widely ranging subjects, going from household issues to a series of in-depth reviews of Programmes of Work, including such contentious ones as Protected Areas, Marine and Coastal Biodiversity, and Biodiversity and Climate Change. On top of those regular ones, there were three more issues that could easily have gone awry.

First, an agreement had to be negotiated on a protocol to deal with Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, or the ABS protocol. After about seven years of painstaking negotiations, Parties (countries that have ratified the CBD) were hard pressed to conclude on a protocol that would regulate the access to genetic resources mostly in the interest of developed countries - and the sharing of the benefits arising from their utilisation – a concern for, mostly, developing countries. I can illustrate the complexity of the ABS negotiations by referring to the case of derivatives: to what extent should a molecule be considered a Genetic Resource under the terms of the protocol? Does changing a few atoms in a molecule that otherwise is found in bacteria dwelling the depths of a tropical swamp make it an artificial substance, that can therefore at leisure be commercialised by a pharmaceutical company?

A second heavily debated issue was the strategic plan for the post-2010 period implementation of the Convention. This plan includes some – more or less strictly circumscribed – targets and deadlines for the conservation and sustainable use of biodiversity. Goals on freshwater biodiversity are included in targets 11¹ and 14². That coming to such an agreement is a difficult process should not surprise anyone. Last but not least, resources have to be made available to make all this possible. Bearing the global economic crisis in mind, arriving at a Strategy for Resource Mobilization that balances the interests of developed countries with those of the G77 and upcoming economies such as Brazil and China was no sinecure.

With all this in mind, it was clear that the Nagoya COP of CBD was not expected to be a walk in the park. The international press had so much as declared it a lost cause even before the start of the meeting, which of course did not inspire much confidence. Indeed, the mood swung from positive to negative and back during the fourteen long days and nights of the meeting, during plenaries, working group meetings, informal contact group meetings, friends of the Chair meetings, the high-level ministerial segment, and, in parallel to those, regional coordination meetings, e.g., amongst EU members states under the Belgian presidency. This went on until and during the final plenary on Friday evening, where exhausted negotiators were seen to frantically run from one Party to another to convince, plead, or explain complex package deals. Until, finally, around 3 AM on Saturday morning, the Chair could finally adopt a full set of decisions, including the Nagoya protocol on ABS, a Strategic Plan for the post 2010 period, and a Strategy for Resource Mobilization, and adjourn a successful CBD COP 10.

If one reads through all the decisions of this COP, one will certainly find weaknesses, but also positive points. My feeling

¹ Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.

² Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

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is that a reasonably acceptable balance was struck between ambition and realism, and between the interests of both developed as well as developing country Parties. In fact, in hindsight, the mere fact that a consensus was reached already exemplifies the sense of responsibility and urgency that will be needed even more to tackle the global environmental crisis that is upon us today.

Further reading:

- www.cbd.int/nagoya/outcomes/: the outcomes of the meeting
- www.iisd.ca/biodiv/cop10/: report on COP10 by IISD reporting services

Hendrik Segers, RBINS

Positive Visions for Biodiversity, a new perspective for our future...

Press release of the European Platform for Biodiversity Research Strategy (EPBRS) Belgian meeting

When science meets society stakeholders to create a Positive Vision of the future that we want and need, the debates can be very sharp and results can be very surprising. That is one observation we can make from the discussions that took place on the 16-17 November between scientists working on biodiversity related issues and various stakeholders representing a wide range of professions (politicians, journalists, business men, NGOs representatives, architects, philosophers, sociologists, etc.). Over 230 participants came from 43 countries to participate in this summit organised by the Belgian Biodiversity Platform, one of the national platforms of the European Platform for Biodiversity Research Strategy (EPBRS).

Positive Visions for Biodiversity was the occasion for the participants to develop a "vision framework" divided in themes and goals. For instance, they decided that by 2050, a sustainable relationship with biodiversity has to be established through governance that is more transparent, effective and balances global and local responsibilities. For this theme to be implemented, they prioritised diverse actions that shall be implemented, including: "Sustainability is the core business of governments/ governance, e.g. world trade and finance has been dramatically

changed".

Creativity was at the heart of the process, some ideas were very innovative and participants, especially scientists, were sometimes surprised and delighted by the new perspectives they were confronted to. For instance, a "sustainable and participatory management of land, seascapes and urban areas" could be achieved only with the help of scientists who could measure and help implementing goals such as: "90% of the human population lives in Green Cities (self-sustainable in transport, architecture, infrastructure, water, waste)."

The results of this two-days participative meeting were communicated to scientists and policy makers for a second phase that took place on the following days (18-19 November). The scientific community identified research priorities linked to the ideas of the first phase meeting, i.e. for the theme "Sustainable and participatory management of land, seascapes and urban areas", scientists agreed on improving "Research on how to create or restore complex habitats (including vegetation dynamics, species assemblages, genetic diversity, propagation techniques, etc.)". The scientists identified a wide range of other research priorities and changes in the way research is structured, carried

out and funded to answer the goals of the vision framework designed by the participants of the first phase of the meeting. The impact of this consultation will depend on the actions taken by each stakeholder, and hopefully, will lead to the implementation of this key message from one participant: "Biodiversity for President!"

Further information:

- www.biodiversity.be/epbrsbe2010/page/ report: preliminary reports of these two meetings
- http://vimeo.com/17868589: short video

provided by Angélique Berhault and Estelle Balian, RBINS

BioFresh annual meeting

The annual meeting of the Bio-Fresh partners and stakeholders will be held in Barcelona, 21-25 February 2011. The event will be organised by the University of Barcelona. During the first days of the meeting, there will be a joint meeting with representatives of DIVERSITAS.



Meeting place in Montserrat, Spain.

The BioFresh blog and cabinet of curiosities

Some facts about the BioFresh communication and dissemination strategy

The BioFresh communication and dissemination strategy blends policy network concepts and emerging trends in science communication – specifically the move away from a knowledge deficit model towards more discursive approaches which encourage engagement between the public, the media, scientists and policy makers.

This framework allows established science-policy approaches to be combined with the communication potential of social media, web-platforms and mobile computing. A key element to this strategy is the BioFresh blog (> http://biofreshblog.wordpress.com). The blog provides a platform to discuss environmental issues, often focussed on (but not limited to) freshwater systems. It seeks to use the potential of web-based media to better explain and democratise information on the science and policy that influences environmental decision



making, actively engaging readers to submit comments, questions and ideas.

User searches show that the blog has become a repository for information and links to current and cutting-edge



topics in conservation. In January 2011, Nature online listed the blog as one of only 9 recglobal science ommended blogs focussed on conservation (> http://blogs.nature.com/ blogs?tags=conservation). The blog will grow in 2011, incorporating more expert-opinion and insight from BioFresh partners. It will also feature a themed series of posts on the most important questions for freshwater science, and another on new methods of science communication.

As well as reflexively engaging in the blogosphere, the communication and dissemination strategy is experimenting with a number of cutting-edge communication techniques and concepts.

Another – more public-led – communication project is the Cabinet of Freshwater Curiosities (> http://cabinetoffreshwatercuriosities.wordpress.com) – relaunched in November 2010.

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The Cabinet of Freshwater Curiosities responds to the observation that the new media is (perhaps ironically) giving rise to a resurgence of old ways of engaging with nature in new guises. The Cabinet is a modern adaptation of the "Cabinet of Curiosity" concept, popular in Renaissance Europe, where collections of unusual and exotic objects from the natural world were assembled to induce wonder and curiosity in their audience. By evoking this same spirit, The Cabinet of Freshwater Curiosities seeks to provide a productive, fun and engaging alternative to "doom and gloom", extinction-based biodiversity conservation messages. We wrote about the concept in depth for popular UK online magazine Caught by the River (> http:// caughtbytheriver.net/2010/11/ cabinet-of-freshwater-curiosities).

The Cabinet is set to expand in coming months, seeking to include more user-generated content through public submissions of "curiosities", and to increase in interactivity through the potential use of an online "curiosity" game.

Another strategy is an animated video (> http://vimeo. com/17797804) introduction to the project that explores the potential of increasingly affordable and flexible technology for communicating complex conservation science ideas to multiple audiences in engaging ways. The four minute long animation explains both the underlying freshwater ecosystem issues, and how BioFresh seeks to address them in a clear and concise way.

By engaging with new means of communicating science, we hope not only to effectively raise the profile of BioFresh and freshwater issues in general, but also to potentially publish journal articles on the role and effectiveness of these methods in achieving their communication goals.

Paul Jepson and Rob St.John, UOXF.AC



Review on the biodiversity trend analysis workshop in Barcelona

Modelling freshwater biodiversity and forecast impacts of future environmental changes in distinct catchments is one of the crucial aims of the BioFresh scientific workpackages.

The biodiversity trend analysis workshop was held in Barcelona last October 13th to 15th (organised by the University of Barcelona), where a total of 16 scientists from seven Bio-Fresh partner institutes and one external institute met to advance on the analyses at the catchments' comparison level. The event focused on how to build a spatially consistent dataset of environmental and biologic attributes for the Ebro, Elbe and Danube catchments, and on developments for the common modelling approach.

Amongst others, biological and environmental data available at the local scale resolution for each catchment as well as available environmental GIS data regarding climate, hydrology, topography and land use were identified. A stochastic model of water temperature based on air temperature for the Júcar catchment (Spain) was also presented and discussed. The meeting further focused on the challenges on applying ensemblemodelling techniques.

Ana Filipa Filipe, UB



Update on the BioFresh data portal development

In August we launched a preview version of the BioFresh data portal at

http://data.freshwaterbiodiversity.eu

This version was conceived as a proof-of-concept to give project members and users a rough idea about what we are working on. We are already responding to a number of comments and suggestions we received, but we are still very much looking forward to receive any additional remarks!

Although we initially worked with a relatively small mega

Update on the BioFresh metadatabase development

During the last few months work on the metadatabase has continued in the background. While the main metadatabase questionnaire website did not change, options how to query the metadatabase entries were elaborated and discussed. The BioFresh metadatabase query page will be publically available in the next few weeks.

BioFresh already raised interest of external data holders who are willing to share their data in the BioFresh metadatabase. If you too are interested to publish your data through the BioFresh data portal and therefore – as a first step – want to submit your metadata, please do not hesitate to contact us:

data@freshwaterbiodiversity.eu

Astrid Schmidt-Kloiber, BOKU

fauna dataset harvested from the GBIF, we are currently in the process of integrating the dataset of the Freshwater Animal Diversity Assessment (FADA) Project (> http://fada. biodiversity.be), which presently contains around 31.000 accepted species names.

In parallel to extending the content on the portal, we are working on improving its look and feel. One major challenge for the development team is updating the mapping interface in order to visualise occurrence data in both shape file format (faunistic regions) and point data format. We hope to launch this major update by mid February, which will allow us to evaluate its status and discuss the future developments for the portal in detail during the annual BioFresh meeting in February.

As always, we welcome your comments and suggestions for the portal on:

data@freshwaterbiodiversity.eu

Aaike De Wever, RBINS

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	ECOSTRIMED database	BF38	pfortuno@ub.edu	Stafen Sehmute	0
	EFI+ database	BF15	andreas.melcher@boku.ac.at	stefan.schmutz@boku.ac.at	0
	base on freshwater biodiversity	BF70	Nike Sommerwerk sommerwerk@igb-berlin.de	Nike Sommerwerk sommerwerk@igb-berlin.de	0
	Fish Database of Europe Streams	an BF17	Andreas Melcher andreas.melcher@boku.ac.at	Stefan Schmutz stefan.schmutz@boku.ac.at	0
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