Society for Conservation Biology
EUROPE SECTION
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Message from Glasgow

Policy Statement and Press Releases of the 3rd European Congress of Conservation Biology

The following pages collate **important messages, news and interesting "tips"** emerging from the European Conference of Conservation Biology (ECCB), which took place in Glasgow in September 2012. The first message is an official statement of the conference, voted by attendants in the conference and approved by the Board of Directors of the Society for Conservation Biology – Europe Section. Other messages and statements were made by attendants of the conference, and collected by the Communication Committee for further dissemination.

ECCB 2012: BIODIVERSITY IN EUROPE - Messages to policy-makers from conservation scientists gathered in Glasgow

ECCB expresses concerns about the on-going intensification and homogenization of agricultural landscapes across Europe and beyond. It calls for a robust and effective plan for sustainable land use that meets current and growing needs at both national and regional levels within Europe whilst safeguarding biodiversity and ecosystem function.

Old growth forests are unique ecosystems that play a fundamental role in the provision of ecosystem goods and services and yet less than 2% remain throughout Europe. ECCB calls for the strict protection of the remaining tracts of old-growth forest (including the ecological processes that maintain them) together with other wilderness areas in the European periphery. It also advocates for the ecological restoration of potential wilderness landscapes.

The establishment of an Intergovernmental Platform on Biodiversity and Ecosystem Services: The aim of IPBES is to improve coordinate responses to the accelerated loss of biodiversity, impaired ecosystem services, and lack of policy action. ECCB supports this process by emphasizing the need for a systematic approach to deal effectively with uncertainty and other types of non-knowledge, which go beyond the existing knowledge gaps. In the absence of evidence, we call for full consideration of the precautionary principle.

ECCB stresses that conservation across national borders should be seen as a cornerstone to linking peoples, societies and nations within the EU and beyond. Apart from the obvious need to protect nature, trans-boundary efforts to protect nature should be perceived as means to promote peace and strengthen common European values, Especially in times of economic and political crisis. ECCB calls for the intensification of trans-boundary cooperation, to be anchored in conservation strategies from regional to continental scales.

WHERE DOES THIS MESSAGE COME FROM:

In September 2012 approximately 900 conservation scientists gathered together at the 3rd European Congress of Conservation Biology (ECCB) in Glasgow, Scotland. The Policy Committee of the Europe Section of the Society for Conservation Biology (SCB-ES) invited congress participants to vote on 10 clearly defined statements to help formulate a position which represents the values and opinions of the members. The 10 statements covered a wide array of current topics of European conservation policy. Over 160 congress participants took part in the vote. The results of the ballot, which summarize main messages emerging from symposia, oral and poster sessions received support of 67% of the voters, and should be regarded as the official "ECCB Policy Message from Glasgow".

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András Baldi: President SCB Europe

Pierre Ibisch: Chair SCB Europe Policy Committee

Guy Pe'er: Chair SCB Europe Communication Committee

"It takes only 5 days to get to Glasgow… by bike!" - Swarovski Optik Green Travel Price awarded during the 3rd European Congress of Conservation Biology

At the end of the European Congress of Conservation Biology, the Swarovski Optik Green Travel Price was awarded to Willem Laermans from Belgium, who made his way up from Belgium to Glasgow using a boat and his bike. In five days he travelled 550 km and was challenged by varying Scottish weather conditions.

The Society for Conservation Biology - Europe Section, has established this green travel prize in order to encourage members not only to invest in science that can inform better management and policy for the conservation of biodiversity, but also to set a good example on how to reduce their individual footprint. Swarovski Optik was happy to support this initiative by providing two prices, the first of which was a pair of Swarovision binoculars. Carina Schiestl-Swarowski, chairman of the executive board of Swarovski Optik: "We work in harmonious symbiosis with nature and environment because this forms the basis for the use of our products. Only nature that is in good order, and the biodiversity of flora and fauna help our customers to enjoy breathtaking, unforgettable visual experiences".

Paul Beier, Global President of the Society of Conservation Biology noted that "Although carbon offsets are necessary, the mantra for reducing emissions is "reduce, replace, offset." These actions are listed in order of priority, starting with reducing our energy use. No form of offset stores carbon as reliably as keeping fossil fuels in the ground. SCB is proud to put the spotlight on avoiding emissions rather than correcting the damage.".

Willem Laermans, a committed member of the SCB Europe Section stressed the importance of permanently reflecting about how we, personally, affect our surroundings. "We need to take the necessary time to think about how to change this society to help it becoming more sustainable". Willem, actually, just wanted to give a good example. He himself suggested the establishment of the Swarovski Green Travel Price and will therefore pass the prize to the former president of the European section, Martin Dieterich, who is very well known for his great care, efforts, and setting personal example in how to reduce our ecological footprint on Earth.

The second prize was awarded to Gerd Lupp, who arrived by train from Sweden to Glasgow via Copenhagen, Basel, Paris and London.

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Picture: Willem Laermanns (right) receives the Swarovski Optik Green Travel Price from Pierre Ibisch, chair of the Policy Committee of the Society for Conservation Biology, Europe Section, and Paul Beier, global president of the society.

Below: upon arrival to the welcoming showers of Glasgow.

Citizen scientists become increasingly central to conservation knowledge and action

We can all contribute to better knowledge of nature!

Photo by: Ulf Gärdenfors

Volunteers collecting and submitting biological records have long been an important aspect of conservation. With the advent of social networks and smartphones, more and more people can contribute to our understanding of nature without any specialist training, and help us understand the decline of endangered species and how they may respond to threats such as climate change.

Public participation extends the geographic and temporal ranges of the data that can be collected and engage people directly in conservation. Citizen scientists thus become increasingly important in providing key information for society, science and decision making. At the European Congress on Conservation Biology (ECCB) today, scientists will explore how to best use these records. Studies include the use of social media to collect biodiversity data in a fun and enjoyable way; how internet surveys on people's gardening practices can aid hedgehog conservation; how citizen scientist's data can be used in forest conservation planning; and how we can measure the effects of climate change on birds by using the GPS features on smartphones.

The international nature of the conference also explores how people's attitudes to nature and wildlife data collection differ across Europe compared to the UK's animal loving public, and how we can all make a difference to conserving the world's precious living resources.

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Biodiversity rich grasslands stock atmospheric carbon

The spring meadow in flower is one of the most pleasant views of "nature" for many people in Europe. Unfortunately, biodiversity-rich meadows are also in decline, and at an alarming rate, throughout Europe. Recent research, presented at the 3rd European Conference of Conservation Biology in Glasgow, demonstrates such species-rich meadows are much more efficient for storing carbon dioxide than the "improved" (i.e. fertilized), but species-poor grasslands that predominate in modern agriculture.

Photo by R. Arlettaz

Meadows with limited fertiliser input and pastures grazed at low stocking density contain a much richer flora and fauna than intensively managed grasslands. Yet they are in retreat over much of Europe – traditionally so in Western Europe, and now also in the new member countries of the European Community.

New research – presented at the European Congress of Conservation Biology (ECCB) held this week in Glasgow – demonstrates that such "unimproved" grasslands play a much greater role than previously thought in the capture of atmospheric carbon.

“We surveyed a wide range of grasslands across England and consistently found that grasslands with low fertilizer inputs store carbon much more efficiently than more intensively-managed grasslands” says Dr Sue Ward of the Lancaster Environment Centre.

There is a growing body of scientific evidence demonstrating that low-intensity grasslands are key suppliers of a range of ecosystem services. They boost pollinators that play a crucial role in agricultural production. Now it is clear that they have a stunning carbon storage capacity as well, thus helping the fight against climate change.

Dr David Buckingham, one of the organisers of the grassland session at the conference, highlights that "These findings demonstrate that new European agri-environmental policies need to take into account this novel crucial function and should be used to promote low-input grasslands all over the continent".

European decision makers are currently debating EU agricultural policy – one of the key policies that already has and will continue to influence the state of grasslands across Europe. Attendants of the symposium on grasslands at the ECCB therefore are calling for policymakers to take the findings from scientific research seriously and adapt the EU agricultural policy to become much more environmentally sustainable. This will not only assure safe future of currently vulnerable European extensive grasslands but will make a considerable input into reaching EU carbon targets.

More information (symposium conveners): Europe@conbio.org

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About the study on carbon sequestration:

- Dr Sue Ward, s.e.ward@lancaster.ac.uk
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Scientists ready to engage policy-makers in the new Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

"IPBES, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, is established and we welcome the initiative", said Carlo Rondinini of the Global Mammal Assessment program at the European Congress on Conservation Biology in Glasgow. "We believe that IPBES could provide the global coordination that according to our forecasting studies will be fundamental for avoiding future biodiversity loss", continued Piero Visconti of Sapienza University of Rome. Henrique Pereira from University of Lisbon, illustrated what are these cutting-edge methodologies to forecast scenarios of global change in socio-economic and biophysical factors. "These, in conjunction with biodiversity indicators, are the most advanced tools that scientist can provide to make socio-economic decisions and develop biodiversity conservation strategies" concluded Rondinini.

The consensus among the participant to the symposium is that the scientific community is ready to engage with IPBES to draft a road map of socio-economic and conservation policies for addressing present and future challanges for the conservation of biodiversity and ecosystem services.

For more details, contact Dr. Piero Visconti, http://globalmammal.org/staff/piero-visconti/

Biodiversity conservation depends on scale: lessons from the science–policy dialogue

Summary

A paper published in the open access journal Nature Conservation examines the mismatches between the scales at which ecological processes take place and the levels at which policy decisions and management interventions are made**.** Various societal actors involved in the process, such as policy makers, land use planners, members of NGOs, and researchers may themselves be operating at various scales, which create additional complications in knowledge transfer between conservation scientists and practitioners.

Text

The year 2010 marked the deadline for the political targets to significantly reduce and halt biodiversity loss. The failure to achieve the 2010 goal stimulated the setting up of new targets for 2020. In addition, preventing the degradation of ecosystems and their services has been incorporated in several global and the EU agendas for 2020. To successful meet these challenging targets requires a critical review of the existing and emerging biodiversity policies to improve their design and implementation, say a team scientists in a paper published in the open access journal Nature Conservation.

These and other questions of increasing the "scale-awareness" of policy makers have been actively discussed at a special SCALES symposium at the 3rd European Congress of Conservation Biology (ECCB) in Glasgow on 28th-31st of August 2012. The lead author Dr Riikka Paloniemi from the Environmental Policy Centre, Finnish Environment Institute (SYKE), in Helsinki, Finland, said: "The policies that regulate biodiversity protection and management operate at many administrative levels, employ a range of instruments at different scales, and involve a variety of governmental and non-governmental actors. These actors often have different insights as to what constitutes a scale-challenge and how to deal with it, inevitably leading to contrasting opinions."

"The question of scale has never been so acute before. Neglecting the spatial and temporal scale at which ecosystems functions when designing conservation measures may lead to long-standing negative consequences, and the failure of the 2010 target is one of the best examples of that" added Dr Klaus Henle from the Helmholtz Centre for Environmental Research - UFZ in Leipzig, Germany and coordinator of SCALES.

The main conclusion of the scientists is that scale-related problems, and their potential solutions, are all about improving our understanding of complexity of the processes. Dealing with a number of different scales and scale-mismatches in biodiversity conservation is challenging; it requires an analytical and political framework that is able to assess the adverse impacts of global change, and to implement the relevant policies at the relevant scale.

Multimedia

1. Logo of SCALES project

2. Nature Conservation 

Original source

Paloniemi R, Apostolopoulou E, Primmer E, Grodzinska-Jurcak M, Henle K, Ring I, Kettunen M, Tzanopoulos J, Potts S, van den Hove S, Marty P, McConville A, Simila J (2012) Biodiversity conservation across scales: lessons from a science–policy dialogue. Nature Conservation 2: 7-19. doi: 10.3897/natureconservation.2.3144

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Additional information

SCALES (2009–2014) stands for "Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal, and Ecological Scales" and is a European research project. Financed by the 7th EU framework programme for research and development (FP7), SCALES seeks ways to better integrate the issue of scale into policy and decision-making and biodiversity management in the EU. For more information please see: www.scales-project.net

Posted by Pensoft Publishers

Scientists call policy-makers to be scale-aware

Summary

Conservation is concerned with the preservation of biological diversity at all levels, from genes to species, communities and ecosystems. Yet conserving this biological richness is made difficult because it varies in complex ways at different scales of space and time. The problem of scale emerges as a critical new theme in conservation practice, as pointed out by scientists at a special symposium of the 3rd European Congress of Conservation Biology (ECCB) held in Glasgow on 28-31 August 2012.

Text

To be successful, nature conservation measures must account for the complexity of the human impact and how nature responds to them, at different spatial and temporal scales. "Scale-sensitive research" emerges as a new, interdisciplinary field in nature conservation where researchers adjust concepts, analyses, and tools to the scale in which these might be used. Policy-makers, on their side, must ensure that the decisions they take resolve ecological problems at the relevant administrative and spatial scales.

Scientists involved in SCALES, a large-scale integrating project funded by the 7th Framework Program (FP7) of the European Union, have identified a series of mismatches between the scale of research at which conservation biologists study how best to protect biological diversity and the need for implementation of scale-based approaches in policy and management, especially in the design of Natura 2000, Green Infrastructure and biodiversity monitoring.

These concerns and new findings have been discussed at a dedicated SCALES symposium at the 3rd European Congress of Conservation Biology (ECCB) in Glasgow on 28th-31st of August 2012. Dr Klaus Henle from the Helmholtz Centre for Environmental Research - UFZ in Leipzig, Germany and coordinator of SCALES opened the discussion: "It has long been known that scale issues play an important role in ecological research. In recent years, however, it has become increasingly clear that scale-awareness is also crucial in designing and implementing conservation practices. Conservation in a rapidly-changing world requires systematic and dynamic approaches to shorten the time from research findings to policy implementation."

Prof. William Kunin from the University of Leeds, UK, added: "Policy-makers should consider not only or mainly the need to protect species richness (that is what scientists call "alpha-diversity"), but also changes in species' composition from one habitat to another, or what is called "beta-diversity". Focusing on beta-diversity, rather than on number of species or certain focal species in a given area or scale, will certainly enhance conservation effectiveness".

Dr. Henle showed that the problem with variation is relevant not only to space but also to time. For example, areas that may be identified as critical to protect may differ if we use data from different

years. Hence, even well-researched programs to select protected areas will fail if they don't consider changes in species distribution and composition between years (that is what scientists call "temporal variation").

Dr Guy Pe'er from the UFZ suggested that "connectivity between remnants of natural habitats must be more effectively included in policy and planning, in order to allow species to survive through climate change: if natural habitats remain so fragmented, many species simply will not be able to alter their distributions with changing climate". Many scientists are aware of the problem, but nevertheless connectivity still does not attract sufficient attention of policy makers and planners, partly because of dealing with "larger scale problems", so to say, of ecosystem functioning and ecosystem services. Novel individual-based simulation models, presented by Guy Pe'er and Greta Bocedi, give some tools to bridge this gap and reduce the risks of errors when moving from local studies to tackling large-scale threats.

Dr Szabolcs Lengyel and his team from the University of Debrecen, Hungary presented a survey of the literature to investigate how specific today's conservation strategies are to certain scales. Although they found a generally increasing awareness of scale-related issues in conservation, they also identified important gaps. The results of the study call conservationists and policy-makers to develop scale-sensitive approaches, in much the same way as cell biologists may use different levels of magnifications under the microscope depending on what they wish to observe and study.

"Perhaps the biggest gap between scientists and policy makers is the gap of speed. We need to work and publish faster. The scientific work will fail to target its most important audience as long as the time until publication is slow, the language is often too technical and the outcomes are published in specialized journals of limited access. Instead, we need to communicate and share our data and findings more openly and far more rapidly", concluded Dr. Henle, the Editor-in-Chief of the new, open-access, inter-disciplinary journal *Nature Conservation*.

Launched at the Congress by Dr. Klaus Henle and Prof. Lyubomir Penev from the Bulgarian Academy of Science, the journal *Nature Conservation* aims at bridging the gap between conservation science and practice using innovative publishing and dissemination technologies. The journal strongly encourages papers not only on biological topics but also on ethical, social, socio-economic, legal and policy issues related to management and use of biodiversity and ecosystems.

Multimedia

1 Logo of SCALES project:

2. Photo of an endangered Natura 2000 butterfly Phengaris arion (listed in the Habitats Directive as Maculinea arion). Photo Chris van Swaay, source Nature Conservation (published under Creative Commons Attribution License (CC-BY))
3. A mosaic of management combined with a flower rich road verge provides a wealth of butterflies. Photo Chris van Swaay, source Nature Conservation (published under Creative Commons Attribution License (CC-BY))

Legend to photos 2 and 3: Targets and scale to focus on should differ when the aim is to protect a certain species (e.g., the butterfly *Phengaris arion* facing threats of habitat loss and climate change), or a protected landscape (e.g., here a Natura 2000 site in The Netherlands)

Original sources

1. SCALES Brief 2. Systematic reserve site selection in dynamic landscapes. Authors: Klaus Henle, Birgit Felinks
2. SCALES Brief 3. Beta diversity of European fauna and flora: the role of dispersal limitations, climate and land-cover at multiple scales. Author: Petr Keil
3. Henle, K. et al.: Nature Conservation – a new dimension in Open Access publishing bridging science and application; Nature Conservation 1: 1-10. DOI 10.3897/natureconservation.1.3081

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9. Additional information

SCALES (2009–2014) stands for "Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal, and Ecological Scales" and is a European research project. Financed by the 7th EU framework programme for research and development (FP7), SCALES seeks ways to better integrate the issue of scale into policy and decision-making and biodiversity management in the EU. For more information please see: www.scales-project.net

Posted by Pensoft Publishers

Ecological monitoring on bird populations in Europe re-evaluated

Summary

A paper published in the open access journal Nature Conservation examined Europe's long experience in monitoring the populations of birds. Scientists calculated that nearly 28,000 persons have been involved in bird monitoring during last few years, investing on average some 80,000 person days per year. Several recommendations for improving bird monitoring are proposed.

Text

Biodiversity and environmental monitoring is of crucial importance to diagnose changes in the environment and natural populations in order to provide conservation practice with relevant data and recommendations. The information from monitoring is required, for example, for the design and evaluation of biodiversity policies, conservation management, land use decisions, and environmental protection.

Birds are headline indicators of biodiversity due to their worldwide distribution and popularity. More than 600 bird monitoring programs are in place in Europe, resulting in huge investment of effort. Nearly 28,000 people have been involved in the 144 monitoring programs analyzed in the Nature Conservation paper, spending almost 80,000 person days per year. The evaluation was performed in SCALES, a large-scale integrated project funded by the 7th Framework Program (FP7) of the European Union.

At a dedicated SCALES symposium at the 3rd European Congress of Conservation Biology (ECCB) in Glasgow on 28th-31st of August 2012, the lead author Dr Dirk Schmeller from the CNRS, France and guest researcher at the Helmholtz Centre for Environmental Research - UFZ in Leipzig, Germany, commented: "Although popular among conservationists, bird-monitoring practices have never been characterized quantitatively. We undertook a focused questionnaire-based survey to objectively explore the strengths and weaknesses of the massive bird-monitoring effort in Europe. The results indicate a high potential for further improvements to bird monitoring in sampling design, data analysis and involvement of volunteers from the public".

"Variation in space and time can cause a significant deviation in the monitoring results, which may lead to incorrect conservation policy decisions", added Dr Klaus Henle from UFZ and coordinator of SCALES. "Therefore increasing awareness of the spatial or temporal scale at which monitoring has been performed can be of crucial importance!"

To optimize the monitoring practices, the scientists have proposed a range of recommendations. For most monitoring programs, the best data type to be collected is quantitative (count) data, such as number of individuals, which provide an early warning for conservation and policy. Further, monitoring could optimize resource allocation between independent monitoring sites. Importantly, even low variation between sites or years can induce spurious conclusions; hence repetitive sampling of the same sites within a year should be the rule.

In case of limited manpower, Schmeller and colleagues recommend an increase in the number of monitoring samples, even at the expense of the size of each sample. Further, more collaborations between monitoring programs at different scales need to be established, so that the sampled data may be integrated and re-used.

Finally, monitoring coordinators have to make special efforts to attract volunteers. Coordinators need to keep in mind several important points: 1) the specific characters of the local community; 2) having a recruitment strategy for volunteers interested in monitoring; 3) maintaining good communication with the volunteers; 4) having low hierarchies and treat volunteers with respect, and 5) making links to other voluntary organizations to add value to the work. Schmeller adds: "There is no one clear recipe to recruit and keep volunteers, but what is important is to keep in mind that the volunteers sacrifice their spare time for monitoring activities, which are of interest to all society!"

4. Logo of SCALES project 

2. Nature Conservation 

Original source

Schmeller D, Henle K, Loyau A, Besnard A, Henry PY (2012) Bird-monitoring in Europe – a first overview of practices, motivations and aims. Nature Conservation 2: 41-57. doi: 10.3897/natureconservation.2.3644

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Additional information

SCALES (2009–2014) stands for "Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal, and Ecological Scales" and is a European research project. Financed by the 7th EU framework programme for research and development (FP7), SCALES seeks ways to better integrate the issue of scale into policy and decision-making and biodiversity management in the EU. For more information please see: www.scales-project.net

Posted by Pensoft Publishers

NEWS: Biodiversity monitoring using the (ultra)sound of insects

Biodiversity monitoring at large spatial and temporal scales is greatly needed to understand the threats of human activities on biodiversity. The vast richness and abundance of arthropods makes them important for ecosystem functioning, but the high level of specialisation needed (the so-called taxonomic impediment) is often a hindrance to monitor them.

In 2009 the French National Museum of Natural History in Paris launched a novel citizen science project to monitor bush crickets using sound detection by sampling from roads. To complete the main dataset, sound recordings were also done along railways.

Volunteers monitored bush crickets (Orthoptera, fam. Tettigoniidae) at large spatial scales by sound detection. Using an ultrasound (bat) detector coupled with a recording device, sounds of bush crickets were recorded along roads and railways from running cars or trains, followed by an analysis using computer software. The chirping or buzz of crickets is a familiar sound to many. Actually Orthoptera males produce mating calls that are species-specific. This allowed the researchers to identify all the individuals and obtain relative measures of insect abundances.

More than 26 000 individuals were identified, belonging to 12 species. The analyses, done by Caterina Penone, showed that even with high train speed it was possible to detect well-known patterns such as the negative effects of urbanization or intensive agriculture on populations and communities. There were also more small species, more generalists and more mobile species in urban communities, which is a similar result than for other species groups such as carabids and birds.

This non-destructive method could be an interesting solution to biodiversity monitoring, also involving the public within a citizen science framework.

Vigie Nature website: http://vigienature.mnhn.fr/

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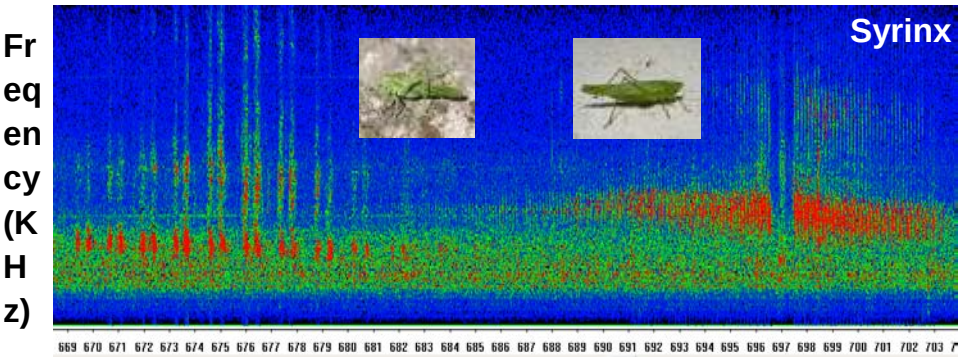
Tranquility transect
30 Km/h
Zoom H2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NEWS: Do urban birds adapt to a weekly cycle and 'work' harder during the weekends?

Weekends are workdays – is the weekly activity cycle of city birds the opposite of people?

Urban environments are increasingly valued for their contribution to conservation, since cities can harbour a rich biodiversity. However, the environmental conditions in those urban ecosystems differ from non-urban habitats and varies a lot, depending on human activity. Cities are warmer, nosier and more polluted than neighbouring "greener" environments. These conditions often have a weekly cycle: noise and pollution (apart from noise and exhaust fumes of lawnmowers) is lower during the weekend than during weekdays. When doing bird censuses in the city of Paris, ecology student Assaf Shwartz noticed that there seem to be more birds during weekends than on censuses during workdays. A statistical test confirmed his hunch: significantly more individuals and more species were registered during weekends than on other days. The same was found for three different, independent inventories of birds: in Paris (2009-10), the wider Paris metropolitan area (2001-3) and urban sites across France (French breeding bird survey, 2001-9). This held only for birds adapted to live in urban habitats , but not in forests, shrub-lands or meadows. Was this due to differences in detectability (due to reduced noise and disturbance, observesr were more effective) or behavioural flexibility, birds adapting to the quieter conditions? If it were merely the more efficient detection, Assaf argued, public holidays that may fall on any day of the week would similarly show a difference. But it did not: the richness and abundance of birds on public holidays were similar to the richness and abundance on weekdays. This indicates that several bird species may develop their own weekly activity cycle, to exploit better conditions during quiet weekends. Birds have very fast metabolism, so they certainly cannot remain inactive during the weekdays – how general this phenomenon is and why this cycle developed remains to be understood.

For more details, contact Assaf Shwartz, PhD shwar.a@mail.huji.ac.il

Did you know? Fungi make the world go around!

The importance of fungi for ecosystem functioning and services

Many ecosystems could not function without the work of hidden organisms in the soil. Fungi play a key role in maintaining critical functions in nature, including serving as nature's recycling bin. They take care of all dead matter, transform it into productive soil and make nutrients available for plants. Furthermore, they help more than 90% of all plants to get access to water and nutrients through connecting the plant roots to themselves and "trading" nutrient and water for sugar.

Many fungi might not be charismatic, but they are excellent indicators for ecosystem status and play a major role in maintaining ecosystem functioning and life. Currently we know that the fungal communities have changed dramatically all over Europe and many species have already gone extinct. This should be accounted for in the formulation of European biodiversity conservation policies.

More information

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The rare blue form of the parrot waxcap (Hygrocybe psittacina), typically found in undisturbed grasslands. Waxcaps and other macrofungi are key organisms involved in nutrient cycling in the soils of grassland ecosystems

Did you know? Rainforests in Europe

(Where the rain never ends – rainforests in Europe)

Europe's rainforests in decline (special symposium)

Everyone has heard of tropical rainforests. However, did you know that Europe also has rainforests? About 15% of all "temperate-boreal rainforests" of the world occur in Europe. Most of these forests have now been lost due to human land-use and pollution. Remnants of these fascinating and forgotten forests, lush with lichens and mosses, only occur in wet and isolated places in Ireland, Scotland and Norway. Experts from around the world are gathered in Glasgow, to share knowledge on the biology and conservation of these precious ecosystems, and to help preserve their biodiversity faced with climate change.

More information: Christopher Ellis, Royal Botanic Garden Edinburgh, http://www.rbge.org.uk Tel: +44 (0) 131 552 7171

Lobaria pulmonaria in a European rainforest