Strengthening the scientific base on climate change to further implement EU policies in N2000 sites and other protected areas

Gut Siggen, Germany
15th – 18th September, 2014

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Workshop Report on workshop with guidelines on learning landscape partnerships

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Introduction and European Policy context

With a fragmented landscape and pressure on our natural resources, opportunities to make the environment more resilient to systemic risks and change need to be found. Healthy ecosystems play a crucial role in mitigating climate change, absorbing roughly half of man-made carbon emissions. Ecosystem-based approaches, to the impacts of climate change, improve the well-being of nature and people alike and are likely to be cheaper than to react to the aftermath of climate inflicted damage. Reaching the climate change targets is a key factor in halting biodiversity loss. Progress has been made in some areas in Europe, yet, major environmental challenges remain. The full implementation of the EU Climate and Energy Package is yet to be done.

The European Union has endorsed an integrated approach to climate and energy policy and committed to transforming Europe into a highly energy-efficient, low carbon economy, however it is recognized that climate change over the next 50 years, will accelerate ecosystem and biodiversity loss. Therefore the EU has adopted the 7th Union Environment Action Programme to 2020 "Living well, within the limits of our planet" and coupled with the Europe 2020 Strategy for Smart, Sustainable and Inclusive Growth, will guide policy development for the period up to 2020.

If this commitment to a low carbon economy is to be fully realized, it will need to be undertaken through mechanisms in all member states. With particular regard to nature conservation and the delivery of ecosystem services, as well as taking action against the loss of biodiversity, protected areas across Europe need to be working collectively towards this goal. Also is it important to integrate the environmental aspect in policies and activities of other sectors, like Industry and Agriculture, to make sure the goals set will be met. Since the last Eurobarometer (Special Eurobarometer 372, October 10/2011) on Climate Change showed that only 51 % of the respondents consider climate change one of the world's most serious problems, more actions on raising awareness amongst EU citizens of the impacts of climate change should also be undertaken.

The EUROPARC Federation, as the largest networking organisation for Europe's protected areas, have the ability to harness the experience of the protected area community, including N2000 site managers, in providing advice to the European Commission in climate change policy and of course in contributing to implement the directives and guidelines arising from the European Commission's Europe 2020 Strategy

Climate change and the need for improved research -manager partnerships in N2000sites

Climate change and its impact on ecosystems, habitats and species are beginning to be more widely understood. However the information is somewhat fragmented and the impact of climate change must also be factored into the management of N2000 sites to ensure the diversity of and connectivity between natural areas and to allow for species migration and survival when climate conditions change.

Climate change is considered to be a factor in the changing conservation status and indeed loss of biodiversity hence the need to gather direct input from protected area experience and expertise to compliment the academic analysis.

Therefore close cooperation between researchers and managers of N2000 sites and protected areas in general will be promoted. The aim is to facilitate discussion between Member States, experts, stakeholders, and the Commission on measures needed to address and meet the findings of the scientific analysis.

EUROPARC members identified that there was little knowledge of research results of researchers utilizing protected area sites for data collection and how these could be used to support management of the sites. It was also generally perceived that researchers are aware of having to discuss their research with policy makers and the public, but less frequently interact with protected area managers. Hence, there is a need to bring together the worlds of research and protected area management.

Workshops bringing together researchers and N2000 managers

To further this the EUROPARC, in collaboration with the Hutton Institute convened a group of researchers and N2000 managers, in Gut Siggen (DE) to examine how research and N2000 sites can be better coordinated if the effects of and management for climate change is to be improved. Further a second workshop with 14 participants with reseachers and N2000 managers, from 10 countries took place in Killarney (IE) during the EUROPARC conference. The results of these workshops have been combined to produce this report.

During the Siggen workshop Dr Kirsty Blackstock summarise the literature review undertaken

"*Overall, the literature suggests that there is a problem with the way that researchers' insights and expertise are integrated into protected area management and that research too often fails to tap into managers' scientific, administrative and lay knowledge. The requirement for research to show 'impact' alongside many researchers' desire to make a practical difference is driving increased attention to improving knowledge exchange between these two sets of stakeholders. The literature highlights that accumulation of knowledge is not enough to protect our natural heritage and more attention to how this knowledge is used is required*"

European Workshop on Developing Learning Landscape Partnerships. K.Blackstock. A Mckee

Workshop - Feedback

12 participants from 10 countries, representing research institutes, universities, from the social and physical sciences as well as N2000 site managers met over 2 days in Gut Siggen (DE), with input from a second one day workshop with 14 different participants with researchers and N2000 managers, from 10 countries took place in Killarney (IE)

Over the 2 days of the Siggen workshop, through plenary and participatory sessions, participants examined the following areas.

The generation of research:practice partnerships, named Learning Landscape Partnerships, that should make research better targeted and more useful in practice, leading to increased capacity within protected areas and improved biodiversity outcomes. These, in turn, should help to protect the natural capital for nature-based tourism and associated social and economic wellbeing.

Over the course of the workshop the participants were able to understand better the differing needs and perspective of each discipline, but also the opportunity to consider potential future research needs.

The workshop will considered N2000 sites research needs, particularly in the context of climate change, and what data and information is needed to implement current European policy, and indeed effective management in the protected areas.

An examination of which sectors require further research and scientific investigation, how protected areas and research can collaborate better and to explore what platform and communications are necessary to ensure research needs and protected area needs particularly on climate change were also addressed.

The workshop report European Workshop on Developing Learning Landscape Partnerships. K.Blackstock. A Mckee made the following analysis of research and climate change and protected area. the following is an extract from that report.

Knowledge Gaps for Learning Landscapes under Climate Change

Adaptive management is required in protected areas due to the potential impacts and opportunities offered by climate change and climate variability. Therefore, EUROPARC was interested in identifying the main knowledge gaps that improved relationships between PAM and researchers could address. The exercise was introduced as an individual brain-storming process "In the context of protected area management under climate change in Europe what are the top 5 knowledge gaps that need to be filled?" Participants then clustered their 63 post-it notes into common themes (in pairs, small groups and finally in plenary), providing a narrative as they went.

Cluster 1: Impact of climate change on biodiversity

This cluster was built up around how climate change may influence biodiversity, in terms of species types, interactions and range, and therefore the impact on protected area management. Specific topics were:

- The colonisation by non-native and dealing with invasive species.
- The effect of climate change on river flow levels, and the quantity and quality of water in freshwater ecosystems.
- Effects on non-native species risks.
- Changes in forest species disease risk.
- The impact on biodiversity particularly alpine, coastal and arctic species.
- The effect on spring chick survival/productivity, especially in Capercaillie.
- Functional responses of keynote species to changes in quality and the availability of critical resources (food, cover, habitat, etc).
- Habitat and species requirements with regard to climate adaptation and adaptation measures.
- Phenological mis-matches.
- The impacts of climate change on the protected area (i.e. in terms of habitats, species, natural risks, etc.) and the role of protected areas as biodiversity refuges under scenarios of climate change.
- The impacts on species interactions under climate change.
- Functional links between the natural history of keystone species and long-term trends in climate and habitat.
- Rarefaction or extinction of cryptic species (or even undescribed species).

The workshop participants also asked for the compilation and dissemination of 'climate change case studies', in particular, case studies demonstrating the measurement of climate change impacts, and illustrating adaptive management in practice.

Cluster 2: Socio-economic impact of climate change

This cluster represented knowledge gaps around the socio-economic impacts of climate change, including the implications for land use, recreation, tourism, local economies, ecosystem services and natural resource provision. Specific topics were:

- The implications [of climate change] for land use choices especially agriculture.
- The socio-economic impact of climate change in and around protected areas, and with regard to biodiversity.
- The impact of climate change on recreational use in protected areas (adaptations of visitor management).

- Infrastructure needs (especially for the very young or old under changing weather patterns – wind and rain in relation to tourism destination choice).
- The impact on local economies from income change relating to climate change, considering local industries, farming, livestock, fishing.
- The environmental impact of a shift in tourism to more northern areas.
- The impacts of climate change on ecosystem services.
- The impacts of climate change on natural resources.
- The effects of differing management systems on natural and cultural resources [in climate change].
- The collective effects of global vs. anthropogenic changes in climate on ecosystems.

Cluster 3: Perceptions and understanding

This cluster represented knowledge gaps around the need to better understand changes to public perceptions of protected areas as a result of climate change and the role of the media. Specific topics were:

- Changing perceptions resulting from climate change and [protected] area use.
- Public perceptions of protected areas and their role in climate change.
- Role of media in shaping social perceptions of climate change in protected areas.
- Media magnification of hazards, e.g. tsunami, heat waves, droughts, forest decay, and changes in the demography of tourists in relation to perception of impacts of climate change on [protected] areas.

However, some participants felt that the role of the media was not a research gap as the knowledge exists, but this knowledge is not currently well utilised in protected area management.

Cluster 4: How to measure impact of climate change

This cluster represented knowledge gaps around how climate change and its impacts are measured, such as with the use of scenarios and projections, standardised benchmarking, knowledge exchange, interdisciplinary approaches and tools for management, as well as suitable monitoring systems. Specific topics were:

- Climate change scenarios and trends in climate change projections.
- (Comparative) European approaches towards climate change effects in parks.
- Interdisciplinary approaches and tools for management (mainly practice); overcoming a lack of coordination and identifying common understandings of 'success' [in climate change context].
- A long-term socio-economic monitoring system [in climate change context].
- The monitoring climate change [i.e. changes to climatic patterns and their influence].
- The position of taxonomy [and whether it is losing significance/utilisation].

The workshop participants also noted 'data accessibility' as a key issue influencing knowledge gaps with regard to measuring the impact of climate change.

Cluster 5: Impact of climate change on management practice

This cluster considered knowledge gaps regarding the impact of climate change on management practice, including long-term development, protection aims, efficient mitigation, species prioritisation, as well as adaptive management and management planning. Specific topics were:

- Long-term (park) development, local partnerships and climate change measures.
- To what extent will changes [due to climate change] be acceptable? Dynamic protection aims [might be needed].
- What is possible to mitigate and what is not (efficient), with regard to biodiversity and climate change?

- Local, regional, national and international [mechanisms for] species monitoring: which biodiversity components are local priorities worthy of special protection and which are the most vulnerable to climate change [and therefore worthy of protection using international mechanisms]?
- How to adapt management or management plans, including stakeholder involvement and the exchange of good practice.
- Overcoming a lack of standardisation and generating comparative benchmarking standards for PA management [under climate change], in addition to models of PA management.
- Knowledge sharing and exchange mechanisms, and overcoming a lack of motivation to read reports.
- Climate-adapted measures to tackle effects, as well as a database/pool of measures for specific processes.

Finally, the workshop participants noted key knowledge gaps that they considered important in the context of developing research-management partnerships, but that were not explicitly concerned with climate change. These knowledge gaps are detailed in Clusters 6 and 7.

Cluster 6: Sharing good practice

This cluster represented knowledge gaps around innovation practices, cultural heritage management and comparing national park governance structures across Europe. Specific topics were:

- Local and regional innovation practices in European parks.
- Parks and participation in cultural heritage management.
- (Comparative) European governance structures of regional (nature) parks.

Cluster 7: Non-climate change knowledge gaps

This cluster represented broader knowledge gap, of concern to protected area management but with no explicit link to climate change. Specific topics were:

- Understanding human behaviour and choices.
- Where there are research gaps to verify management practices and vice versa.
- Biodiversity loss NOW + Biodiversity 2020 targets.
- Strengthen existing role/measures for protected areas.
- Using ecosystem service framework.
- Connecting people to nature.
- Tourism market trends and impacts.
- Good practice community engagement in protected areas; comparative research.
- Using “assets” to stimulate local innovation in protected area.

During the discussion, many felt that protected area management should pay more attention to research regarding how to ‘sell’ ideas and ‘market’ the message about nature conservation under conditions of a changing climate, with protected area managers needing skills in media relations and effective communication rather than natural science per se. There was also a discussion of benefits and risks of using an ecosystem service framework to ‘sell’ the benefits of nature conservation, with some arguing that it is a good way to get protected areas to matter to the wider population, but others arguing that the concepts do not capture the fundamentals of biodiversity properly and so may undermine the main aim of most protected areas.

Workshop Conclusions

AT the heart of the issue considering research and N2000 sites, in climate change or any other field of research is the "disconnect" between research that is taking place and the management needs of the site. A Learning Landscape Partnership model is needed to give guidance on how such partnerships can work to benefits the needs of the researcher and those of the site.

Based on the input from both workshop the following model was adopted. With an analysis of how to set up a Learning Landscape Partnership.

Figure 1: Revised 'Edinburgh' model summarising the factors required for Learning Landscape Partnerships derived from the literature and integrating participant views expressed at the workshop in Edinburgh on 28th April, 2014.

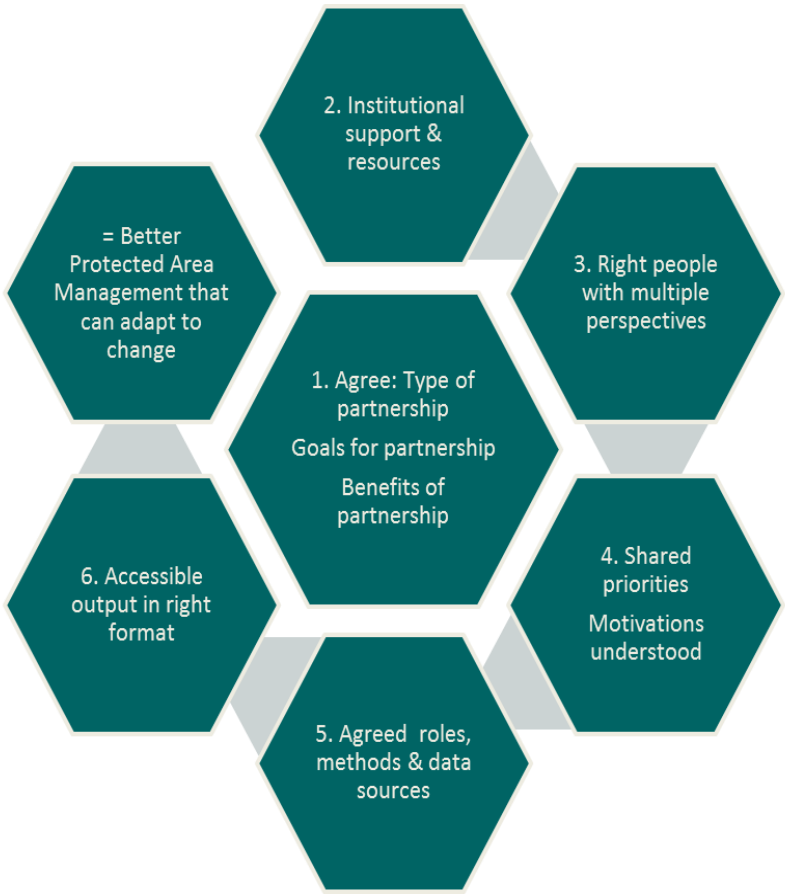
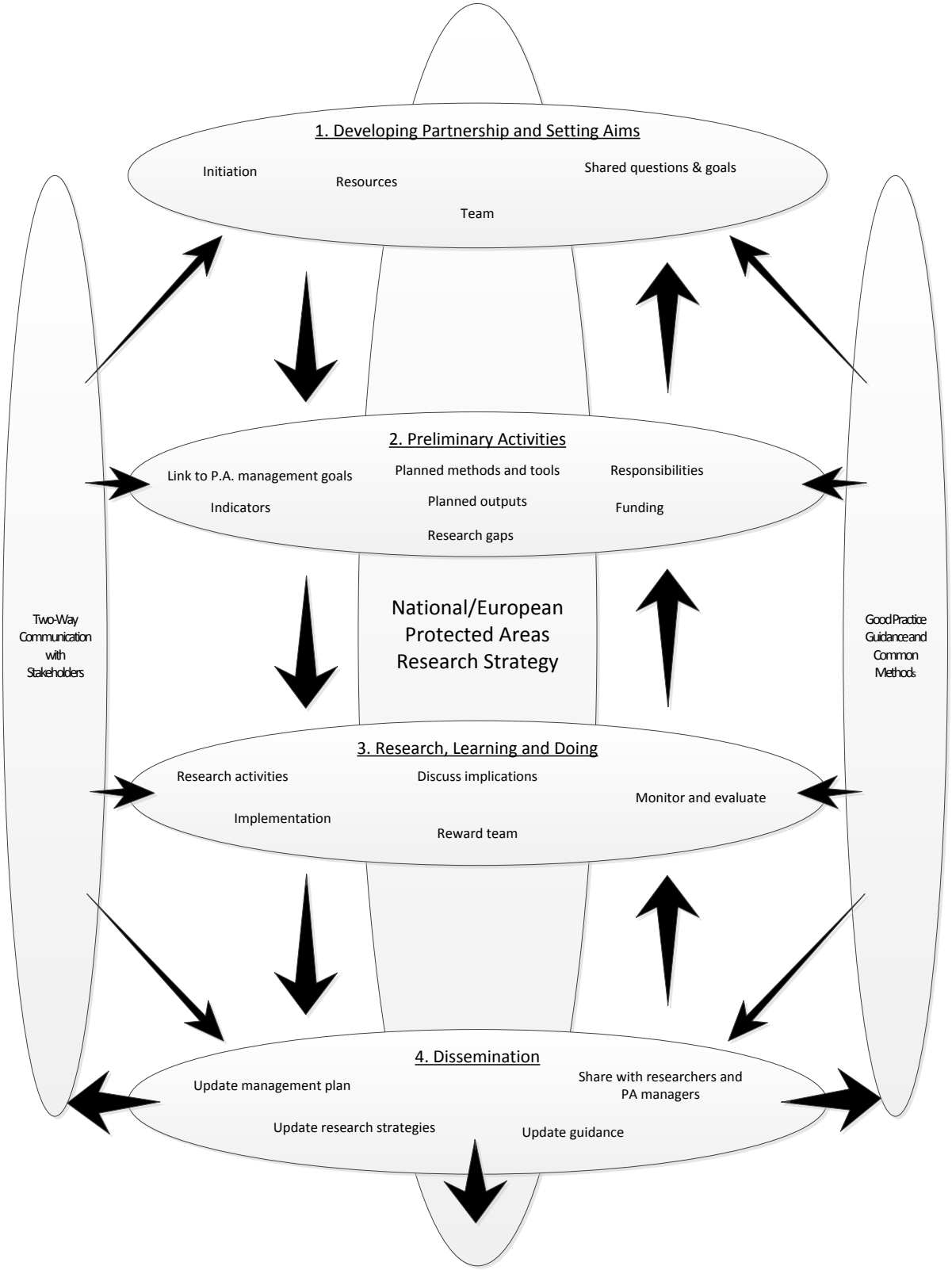


Figure 4: Model v3.0: the 'Siggen model', illustrating the process of developing learning landscapes.



Stage 1: Developing the partnership and agreeing the aims

1.1 In the context of the current protected area management plan(s), something initiates the need for a partnership – could be a goal, a problem, or a question. Someone or some people start the process.

1.2 Sufficient resources and support from the organisations involved (e.g. Park Management organisation and University) to get up to Stage 3 are found; and sources of funding to complete stage 3 located.

1.3 A team is assembled of PAM and researchers; this might also include other stakeholders. Their motivations are considered including the benefits for them and the rewards they seek. The roles that they are going to play in the project are agreed.

1.4 A set of shared questions and goals for the project (prioritised where necessary) are developed and agreed. As part of this, a shared philosophy about the process by which the project will run is discussed. Possibly a formal agreement or MOU is drawn up for the partnership.

1.5 The questions and goals should be checked against a wider national or international Protected Area Research Strategy such that research is coordinated and not duplicating existing work.

1.6 Wider stakeholders need to be informed that a partnership has been set up and consulted about what it plans to do, how it plans to do it and why it is needed. Opportunities to actively engage important supporters (e.g. businesses, policy makers, politicians), who will have an impact on whether the project succeeds, should be developed, such as an advisory group.

1.7 Steps 1.2-1.6 often require skilled facilitation and the use of guidance (e.g. on how to select the team, how to engage stakeholders, how to write an MOU, etc).

Please note, however, that steps 1.1 – 1.7 don't always happen in this order, but remain connected. The order may be dictated by the prior existence of a research strategy (see Step 1.5) that prompts a team already doing something else (see Step 1.3) to initiate a partnership, or available funding might be offered (Step 1.2), which triggers the consideration of partnership development, and so on.

Stage 2: Preliminary activities to develop project proposal

2.1 Develop the detail of what the partnership is going to do in terms of methods and activities including identifying the research gaps that need filling and where they can learn from transferring existing data or methods.

2.2 The project should adopt common good practice methods and processes such that their results will also be transferrable to other areas.

2.3 The specific responsibilities of individuals in the partnerships should be agreed so that they can work these into their job planning processes.

2.4 The project proposal should be clearly linked to PAM goals and activities.

2.5 Indicators by which change can be measured should be identified and these should include bio-physical and socio-economic indicators to help with adaptive management, but also 'process' indicators to judge how well the partnership has worked. The data required for the baseline and the indicators should be included as part of the project design.

2.6 The expected outputs and how they will be used should be discussed (this often relates back to rewards and benefits for the researchers).

2.7 Wider stakeholders need to be consulted about what the partnership plans to do and those who might be needed to help supply data should be actively involved in finalising the project proposal.

2.8 Locate funding to undertake research and implement results (many partnerships might get stuck here but it is still useful in building common understandings to get to this point. The partnership might then be dormant until a new funding opportunity arises).

Stage 3: Active research and learning

3.1 Undertake research as agreed. This may be to update the management plan or to fill a knowledge gap.
3.2 Then implement the results of the research! This may lead to additional research on the effects of the management intervention.
3.3 Monitor and evaluate the process using the indicators agreed in step 2.5, to see if the project is achieving its goals and aims.
3.4 Fine tune the process may have to repeat steps 3.1 & 3.2 as a result of 3.3.
3.5 Ongoing communication within the project team to interpret results; but also ongoing communication with wider stakeholders and key supporters to keep them informed of progress and also to use them to discuss results and explore the implications.
3.6 Ensure rewards and benefits for PAM and researchers are realised (see step 1.3).

Stage 4: Dissemination

4.1 Share information and learning with others in other Protected Areas and other research organisations.
4.2 Use information and learning to update management plans and activities.
4.3 Use insights to update national/European research strategies and guidance.

Through the adoption of this model and these processes , and by bringing in good practise examples from sites across the EUROPARC network, will enable strategic and coordinated response to the needs of research and those of N200site management to emerge . With a strong and functioning partnership in place a better understanding the differing needs and perspective of each discipline, but also the opportunity to consider potential future research needs should develop.

In particular N2000 sites research needs, particularly in the context of climate change, and what data and information is needed to implement current European policy, and indeed effective management in the protected areas would be agreed with both research institutes and the N2000 sites and continue through a mutually beneficial partnerships.

Through the huge body of work undertaken during 2014 supported by the LIfe NGO operating grant, and the development of the learning landscape partnership model developed, we would Strengthen the scientific base on climate change to further implement EU policies in N2000 sites and other protected areas

Next Steps.

The results of these workshop will continue to be widely disseminated through the EUROPARC network and the networks of the institutions involved in this work to date.

Given the success of this series of workshop and the committment developed by the individuals and institutions involved a follow up meeting 2015 is being planned. This would seek to develop a project proposals to develop this model, test and revise it in working N2000sites. Representation would be made to DG Research and DG Environment and DG to explore mechanisms to take forward this wok. EUROPARC too is exploring means to harness the support for this area of work from within its structure through the creation of a working group or scientific advisory group.