



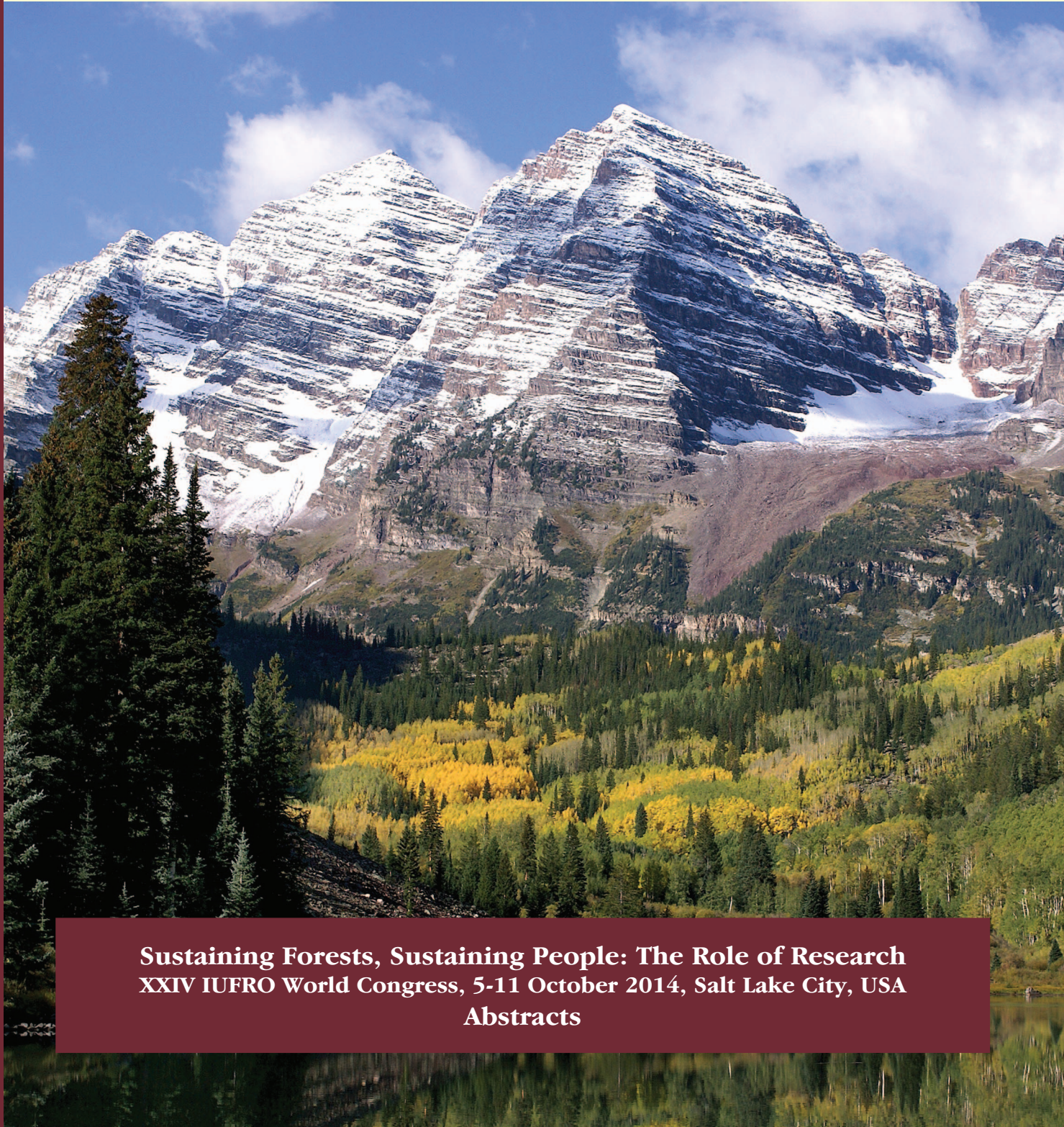
Inclusion of recreational indicators in the National Forest Inventory experiences and results from Denmark

Jensen, Frank Søndergaard; Nord-Larsen, Thomas; Johannsen, Vivian Kvist; Skov-Petersen, Hans

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The International Forestry Review



**Sustaining Forests, Sustaining People: The Role of Research
XXIV IUFRO World Congress, 5-11 October 2014, Salt Lake City, USA
Abstracts**

**EDITORS: JOHN A. PARROTTA, CYNTHIA F. MOSER, AMY J. SCHERZER, NANCY E. KOERTH and
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Abstracts

EDITORS

**JOHN A. PARROTTA, CYNTHIA F. MOSER, AMY J. SCHERZER,
NANCY E. KOERTH and DARYL R. LEDERLE**

Linking empowerment outcomes, social capital and gender in forest-based community ecotourism in Ghana.

A multi-method approach. Hidalgo, A.R. (*University of British Columbia (UBC), Canada; anaelia@interchange.ubc.ca*).

Empowerment is seen as an expected outcome of community-based natural resource management (CBNRM) projects. This study assesses: (1) five dimensions of empowerment (i.e., political, social, economic, psychological and environmental); and (2) their links to gender and social capital (i.e., social networks, trust and norms), in the context of two forest-dependent community ecotourism projects in the Volta Region of Ghana. A mixed-method approach, including ongoing qualitative and quantitative analyses at the individual and community level, is used to unfold how social capital and gender may contribute to explaining outcomes within these five dimensions of empowerment. The presentation will focus on how this multi-scale and mixed methodology helps unfold the different ways in which empowerment outcomes differ by gender, and how social capital measures may partly explain these differences. Also discussed will be the likely motives and consequences of those gender differences in achieving sustainable forest management of community-driven projects.

An analysis of long-distance trail development in Japan based on protected area management and rural development.

Ito, T. (*University of Tsukuba, Japan; ito.taichi.ft@u.tsukuba.ac.jp*), Tanaka, N. (*Tokai University, Japan; tanaka_nobuhiko@tokai-u.jp*).

This paper reviews the development of long-distance trails in Japan from the view point of protected area management, and then reveals the value as tourism destination for trekkers as well as rural development for local people. Japan's recreational long-trail development started in 1969 inspired by the Appalachian Trail designation as one of the national trails in the United States as well as by the British countryside trails. Unlike these nations, Japan's Ministry of Environment developed a trail system stretching 21 000 km in 45 years without any trail laws or supporting non-profit organizations (NPOs). The results are mixture of mountain-ridge and countryside trails and paved sidewalks in urban areas while crossing many protected areas. The trail planners stressed easy access to trailheads, but trekkers preferred rerouting to mountain ridges while reducing paved routes. On the other hand, after the designation of pilgrimage trails in the Kii mountain range as a world heritage site in 2004, local NPOs started trail development independently from the national trail system. It is time to connect such popular local trails with national ones by communicating with each other. Such an experiment is being carried out in a new national park in tsunami-damaged areas expecting rural development by foot tourism.

Integrating community development with the management of grasslands and wetlands at Ke'erqin Nature Reserve, Inner Mongolia, China. Liu, J., Tu, C., Zhang, Y (*Renmin University of China, China; liujinlong@ruc.edu.cn; tuchengyue@qq.com; zhangyiwen@ruc.edu.cn*).

Since 2007, with the support of the UNEP/GEF funded Siberian Crane Wetland Project, various community development activities in the Beizifu community have been carried out at Ke'erqin National Nature Reserve in the Inner Mongolia Autonomous Region. These community activities covered a wide range of elements for an environmentally-oriented integrated development approach: restoration of traditional cultures, empowerment of local communities, self-organization, rural bio-energy, establishment of community revolving funds, promotion of micro-enterprises, participatory pasture management planning and monitoring, environmental education, and establishment of the community-initiated Beizifu Ke'erqin Pasture Protection and Management Association. Based on this intervention, this paper documents the reflections on key points for identifying interventions and projects in the Beizifu community supporting community-based natural resource management. These points are: translating the conceptual strategy for intervention into an operational strategy, targeting model and orientation, identifying actions supporting community-based resource management, developing trust between outsiders and the community, changing the behaviour and attitudes of local officials, and monitoring and evaluation of community actions. Finally, this paper reviews some critical issues for development interventions at the community level supporting sustainable natural resource management and biodiversity conservation, including development intervention, unification of community, culture – in particular traditional culture, and centralization and decentralization.

Is the sustainable forest management for ecotourism a food security plan? Rodriguez, S. (*Universidad Autónoma de Chihuahua (UACH), Mexico; sandra_osu@yahoo.com*), Mayett-Moreno, Y. (*Universidad Popular Autónoma del Estado de Puebla (UPAEP), Mexico; yesica.mayett@upaep.mx*).

In spite of several forest areas have been destroyed to increase land for agriculture, food insecurity is still an issue because people lack available cash to purchase food. Forest management for ecotourism becomes instrumental to community development, contributing to preserve resources and securing income to access food. The benefits associated with ecotourism are attractive to the new generation of farmers who want to stay on their farms. This study explores the perceptions of young adult farmers toward ecotourism as a substitute for farming and retention of work force in the community. It also identifies underlying motives to conserve the forest. Q methodology was used to assess perspectives, 36 statements were sorted by 16 young adults of a small rural community in Puebla, Mexico. Two factors that explained 47% of the variance were extracted. Young adult farmers are committed to conserving the forest and to following a management plan for ecotourism; however they do not perceive ecotourism as a substitute for farming but as a source of additional income and correlate it with their desire to stay in Mexico. The interest for forest conservation relies on cultural traditions and as an opportunity for women's involvement in forest management.

A-15 The future of recreation in forests and other nature areas

Organizers: Peter Fredman (Mid-Sweden University), Frank S. Jensen (University of Copenhagen, Denmark), Tuija Sievänen (Finnish Forest Research Institute, Finland) & David Edwards (Forest Research UK)

Willingness to travel to avoid conflict for forest recreation planning. Bakhtiari, F., Jacobsen, J.B., Jensen, F. (*University of Copenhagen, Denmark; fba@ifro.ku.dk; jbj@ifro.ku.dk; fsj@life.ku.dk*).

Expanding knowledge of the conflict characteristics and the causes might assist recreation planners in conflict reduction (Jacob and Schreyer, 1980). Based on a questionnaire we categorised forest visitors according to their activities and for each group we looked at causes of conflict. Furthermore we constructed a choice experiment to estimate the distance visitors are willing to travel to encounter fewer visitors and thereby potentially fewer conflicts. Comparing marginal willingness to travel of different user groups suggests that some groups do have a willingness to travel further than the average to reach a forest with few visitors. In general average willingness to travel to reach a forest area with few visitors is 6 km per visit. But mountain bikers, peace lovers and horse riders are willing to travel 4 km more per visit to reach a less crowded forest. In the other end we find exercisers who are willing to travel 2 km less smaller than the average to reach a less crowded forest. The discussion provides managers with comprehensive information of the preferences of different forest user groups which can assist in a development of policies aimed at managing conflict among forest user groups.

Understanding perceptions of nature-based tourism's adaptive capacity to climate change in Maine. De Urioste-Stone, S., Scaccia, M. (*University of Maine, USA; sandra.de@maine.edu; matthew.scaccia@maine.edu*).

The purpose of this research is to gain an in-depth understanding of diverse perceptions of adaptive capacity of tourism destinations in Maine to climate change. Tourism is a key component of Maine's economy, and is increasingly important to the economic development of many rural communities. The majority of visitors to Maine participate in nature-based tourism activities. Climatic conditions are key attributes in attracting visitors to the region, making the industry highly sensitive to weather and climate variations. Climate change scenarios for Maine suggest increases in average annual temperature and precipitation and reduction in snow. A case study methodology is being used to understand stakeholder perceptions of climate resilience of rural tourism destinations. Data is being collected using semi-structured interviews with a diversity of tourism stakeholders to understand their perceptions of destination resilience, emissions reduction, and adaptive capacity. Initial analyses of the first round of interviews suggest different levels of concern exist about climate change impacts to the industry among the diversity of stakeholder types (private, non-governmental, NGOs). Few stakeholders have embraced emission mitigation strategies as part of their business practices. Limited adaptation strategies are currently in place (e.g. snowmaking, product diversification, etc.).

Forest recreation monitoring in Great Britain: lessons learned and future directions. Edwards, D., Marzano, M., O'Brien, L. (*Forest Research, United Kingdom; david.edwards@forestry.gsi.gov.uk; mariella.marzano@forestry.gsi.gov.uk; liz.obrien@forestry.gsi.gov.uk*).

Great Britain (GB) has a long-established programme of outdoor recreation monitoring, most notably as part of regular national surveys conducted separately in England, Scotland and Wales. A considerable body of data has been generated over the last 20 years revealing patterns and trends in forest-based engagement. This paper begins with a brief overview of the methods and key insights revealed by recent monitoring in GB. Our main aim, however, is to step back from the data and reflect upon the direction and purpose of outdoor recreation monitoring. Firstly, we examine how, and to what extent, the data is being used to support forestry decision-making. Secondly, we explore the shift away from visit numbers to include a greater range of measures of the benefits of engagement. Thirdly, we consider the evolution in conceptual frameworks away from indicators of sustainable forest management towards natural capital accounting and an ecosystems approach. There is a risk that monitoring becomes a tick-box exercise that generates data for its own sake. In contrast we highlight its important role in policy advocacy, and the need to generate tailored evidence-based claims of the positive impacts of engagement with nature on individuals, local communities, and regional and national economies.

A Web-based panel approach to outdoor recreation inventories – experiences from Sweden. Fredman, P. (*Mid-Sweden University, Sweden; peter.fredman@miun.se*).

This presentation deals with a novel approach to monitor outdoor recreation participation at the national level and presents preliminary results from an ongoing inventory in Sweden. The Nordic region is globally well known for excellent outdoor recreation opportunities, including the "friluftsliv" tradition and the Right of Common Access to nature areas. In Sweden, eight of the 16 national environmental objectives include goals related to outdoor recreation and in 2010 the Swedish parliament voted for a national policy on outdoor recreation which was followed by a government writ on measurable objectives for each of the ten policy areas in 2012. As indicators and methods to monitor these policies recently were developed, a "last-visit" web-based panel approach was implemented to monitor outdoor recreation participation and future trends. This approach includes twelve waves of 700 responses each during one year with questions concerning aspects such as participation, accessibility, motivation and constraints. The aim of this presentation is to provide a discussion on methodological considerations related to outdoor recreation population surveys as well as preliminary participation data and trends based on the ongoing national inventory in Sweden.

Using existing data in national biodiversity monitoring program (NILS) to create new approaches for monitoring recreational indicators. Hedblom, J., Christensen, P., Svensson, J. (*Swedish University of Agricultural Sciences, Sweden; marcus.hedblom@slu.se; pernilla.christensen@slu.se; johan.svensson@slu.se*).

The monitoring program National Inventory of the Landscape in Sweden (NILS) combines field inventory with aerial photo interpretation. The aim is to monitor prerequisites for biodiversity and impact of land use on a landscape scale. However, the sampling approach provides data that can be used for indicators, e.g. for recreational assessments. Line intersect field data can be used to generate information on the amount (m/ha) and length of paths in different areas and habitats. Detailed interpreted aerial photos can be used to detect changes in woodlands and forests that fulfill high recreational criteria, such as old, large-crowned deciduous trees and forests that are easy to access. The interpretation of these analyses has required a transdisciplinary approach. Natural sciences that collect biophysical data for biodiversity need to have a close dialogue with social sciences that know what data to combine to find landscapes with high recreational values. An innovative approach is to use existing photos, originally for documenting permanent plots, to rate amenity values in the landscape. In total about 28 000 photos, systematically collected, are available per national-scale inventory rotation. The data provided by NILS have been suggested to be used in the Swedish national environmental objectives as indicators for recreation.

Assessment of tourism impacts towards sustainable co-management approach- a case study at Satchari National Park, Bangladesh. Islam, M. (*University of Queensland, Australia; wasiulislam7@yahoo.com*), Rupa, M. (*Khulna University, Bangladesh; mehzbabin.ku@gmail.com*), Sadath, M. (*Khulna University, Bangladesh & Georg August University, Göttingen, Germany; mnsadath@yahoo.com*).

Tourism expansion creates both positive and negative impacts on the destinations like Satchari National Park (SNP). The purpose of this study was to assess the socio-cultural, economic, environmental and institutional impacts of tourism development considering the local context of SNP and co-management approach (CMA). This study was based on field survey following a purposive sampling method for face-to-face interviewing of the local residents and project officials. SNP has potential for (eco)tourism because of its wilderness, landscape, biodiversity and easy communication. People from home and abroad visit this destination in large numbers during the peak season (November to March). The results showed that respondents strongly agreed with the idea that tourism provided many economic and socio-cultural benefits but the residents were ambivalent about its costs. They opined that tourism at SNP had the potential to generate alternative incomes to protect the park, build environmental awareness, increase literacy, etc. On the other hand, tourism caused social instability, a breakdown in traditional conservativeness, seasonality of jobs, etc. The findings of this research might be helpful to develop a strategic management plan for SNP tourism where the local residents are crucial tourism development partners on the way to sustainable application of CMA at the SNP.

Inclusion of recreational indicators in the National Forest Inventory – experiences and results from Denmark. Jensen, F., Nord-Larsen, T., Johannsen, V., Skov-Petersen, H. (*University of Copenhagen, Denmark; fsj@life.ku.dk; tnl@life.ku.dk; vkj@life.ku.dk; hsp@life.ku.dk*).

Several international processes aim to monitor forest status, and the focus on the recreational/social function is increasing – as well as the demand for cost-effective monitoring efforts. The Danish National Forest Inventory (NFI) is based on a 2 km × 2 km grid, with four sample plots placed in a 200 m × 200 m square in each grid cell. Based on a 2006 trial inventory, 11 recreational indicators were identified including trails, hunting facilities and litter. The paper presents results founded on a total of 4 138 forested clusters (constituting the primary sampling units) inventoried in 2008–2012. It was found that hunting facilities were present on 27% of the clusters; forest roads/trails on 35%, while tracks were found on 17% – indicating access facilities are present on more than half of the Danish forest area. The results can be related to ownership status and geographical/administrative regions. It is revealed that national forest inventories, which are relatively simple and cost efficient, can be expanded to include a number of recreational/social indicators which generally is not available otherwise. The continuity of the measurements will be a valuable addition to sustainable knowledge-based management and policy decisions.

Outdoor Recreation Future in Finland. Sievänen, T., Neuvonen, M. (*Finnish Forest Research Institute, Finland; tuija.sievanen@metla.fi; marjo.neuvonen@metla.fi*).

In Finland, the government and the ministries demand continuously updated foresight information. The systematic monitoring for outdoor recreation trends started in the end of 1990s. The national outdoor recreation demand survey has been conducted two times. The methodologies used both in data collection and with statistical calculation are designed to produce comparable recreation demand information across time. The trend information covers participation rates and frequencies of 86 recreation activities, characteristics of close-to-home recreation occasions and nature trips, use of different types of recreation areas, etc. One remarkable change over the last ten years is that people 65–74 years old are participating more actively now than the same age group ten years ago. Growing activities in popularity are, to mention some, spending time at recreation home, gathering small wood, forest work in leisure time, camping in back country and bird watching. Qualitative scenarios are used for better overall understanding how societal changes may reflect changes in outdoor recreation. The relevant components of change are identified as an aging population, expected increase in living multiple homes and climate change, which will have consequences related to where people recreate, what kind of recreation activities people participate in and how recreation opportunities are available for different population groups.

Managing forest aesthetics in the boreal fringe. Sténs, A., Marald, E. (*Umeå University, Sweden; anna.stens@historia.umu.se; erland.marald@idehist.umu.se*).

The value and management of forest aesthetics have been heavily studied since the early 1970s. However, studies moving outside of urban areas are less frequent. This also holds for Sweden. Previous research has focused on the southern, urban parts of the country rather than the sparsely populated, forest dependent, northern interior. However, to increase the quality of livelihood in these areas, an aesthetically attractive environment is an important component. This paper discusses the attitudes to aesthetical considerations among forest owners and consultants in the northern parts of Sweden. It raises questions such as: Which considerations have been taken to aesthetical values in boreal forests? What policies lay behind and what was gained from these considerations? What are the attitudes to forest aesthetics today and who will be responsible for the preservation and creation of aesthetical values in the future? The study has been conducted through a qualitative literary review of previous research and interviews with present stakeholders. Preliminary results show that the societal interest in forest aesthetics is high, but policies regulating these values have become more vague. There also seem to be a discrepancy between forest owner's and consultant's attitudes when discussing aesthetical considerations in boreal productive forests.

A-16 Ethics and values in relation to forest, wildlife and recreation management

Organizers: Christian Gamborg & Frank S. Jensen (University of Copenhagen, Denmark)

Fires, forests and conflict in times of rapid environmental change in Sweden and Australia. Eckerberg, K. (*Umeå University, Sweden; Katarina.eckerberg@pol.umu.se*), Buizer, M. (*Murdoch University, Australia; marleen.Buizer@gmail.com*).

Environmental problems seem to be increasingly complex, hard to solve by instrumental rationality, and laden with conflict when they demand human interventions in nature. The use of fire is one such contested intervention. This paper examines the role of conflict and deliberation in forest fire management practices in Sweden and Australia whose landscapes have historically been shaped by fire. In Sweden, burning is gradually emerging on foresters' and nature conservationists' agendas for nature conservation purposes. In Australia, prescribed burning has been practiced on a relatively broad scale, chiefly to prevent larger fires and also for nature conservation purposes. Touching on a wide range of values, including biological diversity, human safety, traditional heritage and professional identity, fire management is often the topic of fierce debate. Contemporary politics places high expectations on collaborative governance, drawing attention to the twin concepts of conflict management and deliberation. How does collaborative governance manifest itself relating to fire management? And what are its chances considering the Swedish and Australian contexts with their strong reliance on technical scientific expertise? We conclude that forms of local, collaborative governance in which conflicts and difference have a place, rather than generalized knowledge, are promising but rare processes to move forward.

A bottom-up approach to criteria and indicators: values and cues in public evaluations of forest management in Australia.

Ford, R., Anderson, N., Williams, K., Bennett, L., Nitschke, C. (University of Melbourne, Australia; fordr@unimelb.edu.au; neridama@unimelb.edu.au; kjhw@unimelb.edu.au; lrb@unimelb.edu.au; cnitschke@unimelb.edu.au).

Criteria and indicator frameworks are an important tool for implementing and evaluating Sustainable Forest Management (SFM). While indicators are generally designed with some participation from interest groups, the values or criteria that members of the public use to evaluate forest management have received less attention. In this study, the aim was to explore values and cues in public evaluations of forest management and to consider implications for criteria and indicator frameworks. Data were collected through 35 laddering interviews with members of the public and forest interest groups in the state of Victoria. These were analysed for links among psychological concepts: held values, valued attributes (related to SFM criteria) and cues used to evaluate forest management (analogous to SFM indicators). Cues were compared to indicators in existing SFM frameworks. This process led to the development of a bottom up framework consisting of seven valued attributes and associated indicators. There were many similarities to existing SFM frameworks for attributes relating to productive, natural and socio-economic outcomes, but an important component of public evaluations, experiential valued attributes, is largely absent from current frameworks. We argue that experiential criteria and indicators should be considered for inclusion in future criteria and indicator frameworks for SFM.

Recreational hunting – a comparative study of attitudes to rear and release among Danish hunters, land owners and the general public.

Gamborg, C., Jensen, F. (University of Copenhagen, Denmark; chg@ifro.ku.dk; fsj@life.ku.dk).

Forest- and open land-based recreation takes many forms. Hunting is a popular pastime in many western countries. Taking the example of Europe, in particular Denmark, hunting does not give rise to many serious area based conflicts – but is nonetheless controversial. In several countries, the population of wild birds is not abundant enough to meet demand, and hence the vast majority of birds shot every year are pheasant and mallard purpose-bred in cages, sheds and pens for the sport (thus a practice of shooting). Although perfectly legal, this practice give rise to value based conflicts and challenges more traditional hunting/anti-hunting arguments, such as hunting being based on sustained yield harvest principles. The paper presents results from a unique dataset consisting of nationally representative samples of approximately 1 100 answers from each of the three key actors: the general public, land owners and hunters on attitudes to rear and release. The data was collected as web-based surveys (2012/2013). The aim is to give a more nuanced view of the support/opposition to rear and release and to get a better understanding of this by means of underlying value issues. The paper analyses attitudes in relation to wildlife value orientations also obtained through this survey.

Effectiveness of integrated conservation and development projects around central Indian tiger reserves.

Macura, B., Secco, L., Pisani, E. (University of Padova, Italy; biljana.macura@studenti.unipd.it; laura.secco@unipd.it; elena.pisani@unipd.it).

In tropical human-dominated forest landscapes, top-down exclusive approaches to forest and biodiversity conservation frequently creates local conflicts due to unequal distribution of power, rights and benefits. In India, the failure of restrictive policies has led governments to think of more inclusive approaches and to involve local people in conservation. While policies became more participatory, that is not proven true for local level practices. Integrated conservation and development projects aim to improve conservation outcomes with inclusive and incentive-based approaches. However, past attempts to implement these projects had mixed success. This study aims to (1) evaluate effectiveness of integrated conservation and development projects around central Indian tiger reserves with respect to changes in attitudes and behaviour of targeted local communities and (2) reveal the functional role of local governance, power relations and negotiation power in the project. The study will combine qualitative and quantitative methods including in-depth interviews with tiger reserves authorities; local NGOs; village self-government and eco-development committee members; and questionnaires administered at the village level with quasi-experimental design. Study results are expected to reveal the reasons for the misfit between policies and practice and to highlight the importance of local level social dynamics, actors and institutions.

Negotiating indigenous collaboration in forestry in Quebec, Canada: finding pathways through multiple processes and actors.

Wyatt, S. (Université de Moncton, Canada; swyatt@umce.ca), Blanchet, É., Gonzalez, N., Fortier, J. (Université Laval, Canada; edouard.julien.blanchet@gmail.com; noemie.gonzalez@gmail.com; jean-francois.fortier.1@ulaval.ca), Fournier, A. (Université du Québec à Rimouski, Canada; u_f_odrey@hotmail.com), Hebert, M. (Université Laval, Canada; Martin.Hebert@ant.ulaval.ca), Lewis, N. (Université du Québec à Rimouski, Canada; Nathalie_Lewis@uqar.ca).