Final report

“Trilateral Summer Academy” (AZ 31003)

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Felix Gruber
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Prepared by
Christoph Nowicki
Project responsible
Eberswalde University for Sustainable Development

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Abbreviations

BNP	Białowieski Park Narodowy
BPNP	Beloveshskaya Pushcha State National Park
BSTU	Belarusian State Technological University
BTU	Bialystock University of Technology
BY	Republic of Belarus
HNEE	Eberswalde University for Sustainable Development
MoU	Memorandum of Understanding
PL	Poland

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in close cooperation with the institutions of higher education from the three partner countries

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Executive summary

The Trilateral Summer Academy was developed in the context of a broad trilateral National Park cooperation between the protected areas Lower Oder Valley National Park (Germany), Białowieski Park Narodowy (Poland) and Beloveshskaya Pushcha State National Park (Republic of Belarus) in order to involve professionals and educate students from partner Universities in the vicinity of the respective protected areas in the field of protected area management, namely Bialystock University of Technology (Poland), Belarusian State Technological University (Republic of Belarus) and Eberswalde University for Sustainable Development (Germany).

The Summer Academy was conducted in three consecutive years – 2013 in Poland, 2014 in Belarus and 2015 in Germany. The three cooperating National Parks built up the implementation scene for each of the Summer Academies in their respective country. Both, lecturers from the Universities and experts from National Parks were involved in teaching and moderating the course. For 10 days 30 students worked in 5 international groups on 5 different topics related to ecosystems, socio-economy and protected area management. The Trilateral Summer Academy was officially accounted by all participating study programmes as a credited and graded module. The final results and conclusions of each Summer Academy year have been presented by the students at a public final symposium, in front of a broad public.

The Summer Academy mainly aimed at achieving the three following objectives. **Firstly**, training 30 students (10 from each partner University) each year in the areas of (forest) ecology, biodiversity and protected area management. **Secondly**, to enhance the cooperation and communication between the actors from all partner organisations. **Thirdly**, to positively influence the communication and mutual acceptance between the protected area administrations and stakeholders from the surroundings of each of the three protected areas, by actively involving them in certain activities of the courses.

From 2013 till 2015, about 200 people participated in the Summer Academy. 90 of them were students forming the focal group of the whole project. They were accompanied by almost 80 Polish, Belarusian and German staff members from the involved Universities and National Parks. Additionally, representatives of local authorities, external scientists and further invited guests played an active role for the implementation of the Summer Academy. Numerous stakeholder groups and members of the local populations were involved via interviews in the students' group work and attended the final symposia where the outcomes were lively discussed in front of a diverse audience.

In total the Trilateral Summer Academy has been a huge success, thanks to the enormous efforts of all cooperation partners. The collaboration between practitioners from National Parks and Universities has been significantly enhanced by increased long lasting personal contacts, also among students. The intensive exchange of expertise and experiences on protected area management in different countries and under divergent frame work conditions has not only revealed technical-scientific competences but especially favoured the reflection and understanding of different conceptual approaches in the respective countries.

Zusammenfassung

Die Trilaterale Sommerakademie wurde im Rahmen eines umfassenden trilateralen Kooperationsvorhabens zwischen den Schutzgebieten Nationalpark Unteres Odertal (Deutschland), Bialowieza Nationalpark (Polen) und Beloveshskaya Pushcha Nationalpark (Weißrussland) entwickelt um Fachpersonal zu vernetzen und Studierende der Partnerhochschulen in direkter Nähe der jeweiligen Schutzgebiete zum Thema des Schutzgebietsmanagements auszubilden, namentlich die Bialystock Technische Universität (Polen), die Weißrussische Staatliche Technologische Universität (Weißrussland) sowie die Hochschule für nachhalte Entwicklung Eberswalde (Deutschland).
Die Sommerakademie wurde in drei aufeinander folgenden Jahren durchgeführt – 2013 in Polen, 2014 in Weißrussland und 2015 in Deutschland. Die drei kooperierenden Nationalparke dienten als Kulisse für die Durchführung der Sommerakademien im jeweiligen Land. Sowohl Dozenten und Dozentinnen der Hochschulen als auch die Experten und Expertinnen der Nationalparke waren in die Lehre und Moderation des Kurses involviert. Zehn Tage lang arbeiteten 30 Studierende in fünf internationalen Gruppen an fünf unterschiedlichen Themen in den Bereichen Ökosysteme, Sozio-Ökonomie und Schutzgebietsmanagement. Die trilaterale Sommerakademie wurde von allen teilnehmenden Studienprogrammen als kreditiertes und benotetes Modul ausgewiesen. Die Endergebnisse und Schlussfolgerungen jeder Sommerakademie wurden von den Studierenden auf einem öffentlichen Abschlusssymposium vor einem breiten Publikum präsentiert.
Die Sommerakademie verfolgte insbesondere drei Ziele: **Erstens**, ein intensives Training von 30 Studierende (zehn von jeder Partnerhochschule) zu den Themen (Wald-)Ökologie, Biodiversität und Schutzgebietsmanagement. **Zweitens**, die Unterstützung und Erweiterung der Kooperation und Kommunikation zwischen den Akteuren aller Partnerorganisationen. **Drittens,** die Verbesserung der Kommunikation und gegenseitiger Akzeptanz zwischen der Schutzgebietsverwaltung und lokalen Bevölkerung durch eine aktive Einbindung lokaler Interessensgruppen der Nationalparkregionen in die Sommerakademien.
Von 2013 bis 2015 nahmen etwa 200 Personen an den Sommerakademien teil. 90 davon waren Studierende als eine der Hauptzielgruppen des Projektes. Sie wurden von fast 80 polnischen, weißrussischen und deutschen Mitarbeitern und Mitarbeiterinnen der beteiligten Hochschulen und Nationalparke angeleitet. Die zusätzlich geleisteten Beiträge diverser Vertreter und Vertreterinnen der Gemeinde- und Bezirksverwaltungen, externer Wissenschaftler und Wissenschaftlerinnen sowie eingeladener Gäste bereicherten die Sommerakademien. Zahlreiche Interessengruppen und Menschen aus der lokalen Bevölkerung wurden durch Umfragen an den Ausarbeitungen der Studierenden beteiligt und wohnten den Abschlusssymposien mit lebhaften Diskussionen bei.
Insgesamt war die trilaterale Sommerakademie dank der enormen Anstrengungen aller Kooperationspartner ein großer Erfolg. Die Zusammenarbeit zwischen den Fachleuten der Nationalparke und Hochschulen, wie auch zwischen die Studierenden, konnte durch verstärkte und dauerhafte persönliche Kontakte maßgeblich verbessert werden. Der intensive Austausch von Fachkompetenz und Erfahrungen über das Management von Schutzgebieten in den unterschiedlichen Ländern und unter abweichenden Rahmenbedingungen hat nicht nur die technisch-wissenschaftlichen Kompetenzen gestärkt, sondern insbesondere auch das Verständnis für unterschiedliche konzeptionelle Ansätze in den jeweiligen Ländern gefördert.

1 Scope of the Project

1.1 Background

In the context of a broad trilateral National Park project between the protected areas Lower Oder Valley National Park (Brandenburg, Germany), Białowieski Park Narodowy, BPN (Poland) and Beloveshskaya Pushcha State National Park (Belarus), the idea arose to develop a training module for bachelor students from partner Universities in the regions of the respective protected areas, Bialystock University of Technology (BTU), Faculty of Forestry in Hajnówka (at the projects' start still named Faculty of Environmental Management), Belarusian State Technological University (BSTU), Faculty of Forestry and Eberswalde University for Sustainable Development (HNEE), Faculty of Forest and Environment). A strong consortium of University and protected area partners has been established. These partners manifested their common goals in a trilateral Memorandum of Understanding[1] stating the development and execution of a joint Summer Academy headed by the Eberswalde University for Sustainable Management (see also section 2.1.1).

1.2 Overall goals and vision

The Trilateral Summer Academy contributed to the enhancement of intercultural, interdisciplinary and institutional exchange among the partner institutions and participating students. It strengthened the cooperation and communication between the partners and facilitated the preconditions for further joint project activities by building up networks at all different levels (University lecturers, protected area managers and students). This led to mutual understanding and respect between the partners, protected area administrations as well as Universities, fostering the trans-boundary cooperation. In addition, the Summer Academy provided contacts to local stakeholders and actors of importance to conservation and land use management.
It furthermore contributed to an in-depth understanding of ecosystems, their functions and biodiversity, the special relevance of wilderness areas and thus the importance and concepts of protected area management and its vulnerability.
The Summer Academy brought students and professionals from three different countries together to jointly work on a broad variety of ecological and nature conservation topics. In the course of this module, valuable experience was shared, which contributed to the exchange of not only technical knowledge but especially to intercultural understanding and communication among partners.

The long term vision for this project was the continuation of the Summer Academy in the future as an integral part of the trilateral cooperation between the protected areas and as constituent element of the relevant study programmes at the partner Universities.

[1] the initiation phase has been financially supported by the Federal Ministry for Environment, Health and Consumer Protection, Brandenburg

1.3 Project objectives

The Trilateral Summer Academy aimed mainly at the three following objectives:

1. training 30 students (10 from each partner University) each year in the areas of (forest) ecology, biodiversity and protected area management

2. enhancement of the cooperation and communication between the actors from the partner organisations

3. positively influence the communication between the protected area administrations and stakeholders from the surroundings of each of the three protected areas, by actively involving them in certain activities of the courses (e.g. surveys conducted by students and final discussions about the course results at the end of each Summer academy).

By the end of September 2015 the cooperation between practitioners from the partner protected areas and Universities should be enhanced by increased personal contact and increased exchange of knowledge and expertise on technical and scientific conservation-related topics.

2 Project realization

2.1 Implementation of the project

2.1.1 Preliminaries and MoU

To achieve the goal of developing and executing a joint Summer Academy the University for Sustainable Development applied for funding at the Federal Ministry for Environment, Health and Consumer Protection in Brandenburg, to support a project, which was aiming at the preparation of the Summer Academy (AZ: 02-1020/238+2; April 2012 - December 2012). The project has been implemented successfully and facilitated the establishment of a strong consortium among the partner protected areas and Universities. Through intense communication with the partners and two cooperation meetings in September 2012 in Poland and Belarus a concept for the Summer Academy could be elaborated and agreed upon (Memorandum of Understanding) by the respective decision makers of the 6 partner organisations in the context of a trilateral meeting in Criewen in November 2012.

2.1.2 The Summer Academy – a tri-national curriculum based module

The Summer Academy was an elective study module, which was designed for students of relevant study programmes from each of the three partner Universities. The Summer Academy was conducted in three consecutive years – the first issue (September 2013) took place in Poland, the second one (September 2014) was held in Belarus and the third Summer Academy took place in Germany (September 2015). The three cooperating National

Parks built up the implementation setting for each of the Summer Academies in their respective country. Both, lecturers from the Universities and experts from protected areas were involved in teaching and moderating the Summer Academy. The duration of the study module was 10 days (including 2 days for travelling). 30 students worked in 5 international groups (supported by one tutor each) on 5 different topics related to ecology, biodiversity and protected area management. The final outcome of each Summer Academy included presentations of the student working groups with involvement of local stakeholders and a joint report on the findings of all groups. The Summer Academy module was accounted as a credited and graded course and showed up in the final degree certificates of all participating students.

2.1.3 Process chronology

The following table 1 shows the chronology and timeframe of the whole process subject to the successful completion of the Trilateral Summer Academy project.

Table1: Chronology of the Summer Academy development and implementation process

Phase	Year	Country of Action	Activities
Initiation	2012	**Germany**	Development of the Summer Academy; MoU
Implementation	2013	**Poland**	1. Preparation of Summer Academy contents (including financial planning)
			2. Execution of Summer Academy (10 days)
		Germany	3. Report writing (including financial management)
	2014	**Belarus**	1. Preparation of Summer Academy contents (including financial planning)
			2. Execution of Summer Academy (10 days)
		Germany	3. Report writing (including financial management)
	2015	**Germany**	1. Preparation of Summer Academy contents (including financial planning)
			2. Execution of Summer Academy (10 days)
			3. Report writing (including financial management)
Completion	2016	**Germany**	Final report writing
			Distribution of reports to all participating partners

2.2 Participants / Target group

The Summer Academy was an elective module for B.Sc. students from the three partner Universities:

- Bialystock University of Technology (BTU), Faculty of Forestry in Hajnówka
- Belarusian State Technological University (BSTU), Faculty of Forestry
- Eberswalde University for Sustainable Development (HNEE), Faculty of Forest and Environment, Faculty of Landscape Management and Nature Conservation

The number of participants for each Summer Academy was limited to 30 students (10 students from each partner University) from the Bachelor study programmes listed in the following table 2.

Table 2: List of Bachelor study programmes involved in the Summer Academy

University	**HNEE**	**BTU**	**BSTU**
Study programmes	Forestry	Forestry	Forestry
	International Forest Ecosystem Management	Environmental Protection	Tourism and Nature Management
	Landscape Management and Nature Conservation		

The students were tutored by staff of the involved Universities and National Parks. Additionally many more members of the participating institutions were practically participating in the implementation of the Summer Academies by guiding excursions, preparing and organizing events, etc.

Furthermore each Summer Academy was aiming at the involvement (interviews and surveys during the course and presentation and discussion of final results) of various stakeholders from the respective protected area regional surrounding:

- representatives from the agricultural sector
- representatives from the forestry sector
- representatives from the tourism sector
- representatives from public administration and
- representatives from local communities.

For a detailed assessment of the number and diversity of people involved in the individual Summer Academies see section 3.3.

2.3 Content of the Trilateral Summer Academy

Accompanied by experts on zoology, botany and ecology, students learned about the huge variety of flora and fauna of the respective protected area and its ecosystems. Trainings and group exercises were conducted during different field trips to the National Parks and surroundings.
Furthermore, the students learned about the importance and concept of ecosystem functions and services and the importance to protect these services e.g. by means of segregative (vs. integrative) conservation approaches.
Protected area management, concepts (different categories: on national, European and international (IUCN) level) and challenges (insight and outside of protected areas) were analysed and discussed. A strong focus was also on the impacts of climate change (and other local, regional and global changes) as one of the present mayor challenges for nature conservation and land use management.
Students investigated by own group work and interviews the biological situation as well as socioeconomic and cultural context of the respected protected area.

Excursion into Belovezhskaya Pushcha National Park (Republic of Belarus)

2.3.1 Topics of student work groups

To achieve the programmes objectives various topics were offered through lectures, seminars, excursions and practical exercises.
The Summer Academy provided a comprehensive range of topics related to ecology, ecosystem functionality and conservation management by taking into consideration the socio-economic dimension of these issues. The principal topics to be selected by student groups (6 students per group (2 per country)) were:

Topic 1: Ecology of flora and fauna in functional forest ecosystems

Students focused their investigation on the ecosystems of the study area and their functionality with a special emphasis on old growth forests. In lectures, excursions and practical work (e.g. establishment of transects for data collection) they learned about specific floristic and faunistic elements of the study area, their interactions, interdependencies and their ecosystemic value.

Topic 2: Forest monitoring systems – research on process-dynamics

Students learned about forest monitoring systems. Through practical exercises they were enabled to establish research sample plots, to apply methods of forest inventory and data analysis. Furthermore, students were enabled to work and compare with the already existing forest monitoring data to detect changes and dynamics (e.g. climate change) in the ecosystems. Students then discussed and suggested specific management strategies in response to those dynamics / changes.

Topic 3: Stakeholder analysis of land use relevant regional actors

The students conducted stakeholder interviews with the relevant land use sectors of the region (e.g. forestry, agriculture, hunting, fishery, (eco-)tourism, department of planning and infrastructural building, people from local/provincial administration, etc.). Students gained knowledge about the expectations and goals of these sectors and possible conflicts for the protected area management. From their findings they derived strategies to enhance stakeholder dialogues and reduce possible resistance to conservation management.

Topic 4: Socio-economic situation of local population within and outside of the protected area

Students investigated the socio-economic situation (income, land use types, (environmental) education, etc.) of the local population within and outside of the protected area. By semi-structured interviews with randomly selected local villagers, they understood local's comprehension and expectation towards the protected area. Students identified conflicts, discussed opportunities and developed strategies to increase the acceptance of the protected area within local communities.

Topic 5: Protected area management and strategies

Students analysed management strategies of the protected area with regard to the selected conservation targets and major challenges identified by the protected area and by conducting interviews with the protected area administration. They learned the numerous tasks and responses of protected area management (e.g. strategic development of management plan, eco-tourism, environmental education (within and outside of the protected area), etc.) and its complexity. Based on their findings, the students tried to present future opportunities to foster the protected area management of the respective National Park.

2.4 Formal Summer Academy framework, requirements and course responsibility

- **Examination form**:
  a) **Project presentation** (marked) of the final findings and conclusions of 20 min followed by a discussion (approx. 20min) with the tutors and the invited audience (5 groups, 6 students each (mixed groups with team members from all partner Universities (2 per country)).
  For grading, a unified evaluation matrix (table 3) has been established for all grading systems, using a defined set of criteria:

Table 3: Evaluation matrix for grading systems

German grading scheme	1,0	1,3	1,7	2,0	2,3	2,7	3,0	3,3	3,7	4,0	5,0
Belarusian grading scheme	10	9	8	7	6	5	5	5	4	4	<3
Polish grading scheme	(6)5	4,5	4	4	4	3,5	3,5	3,5	3	3	2
1. Presentation quality (rhetoric skills, physical communication etc.)											
2. Visualization (technical performance)											
3. Target group orientation											
4. Structure											
5. Time management											
6. Originality											
7. Information provided (profoundness of analysis)											
8. Information provided (logic of derived strategies)											
Comments:											

Grading scheme	excellent / very good	good	satisfactory	acceptable	poor / failed
Polish	(6) 5	4,5; 4	3,5	3,0	2
Belarusian	10; 9	8; 7; 6	5	4	3; 2; 1
German	1,0; 1,3	1,7; 2,0; 2,3	2,7; 3,0; 3,3	3,7; 4,0	5

  b) The presentation was supplemented by a short **project report** (not marked) of approx. 10 pages to be handed in two weeks after the accomplishment of the course. The reports were submitted to the responsible head of the module of the corresponding University.
- **Teaching language**: English
- **Teaching form**: Lectures and seminars were provided by the staff of the respective Faculties of the host Universities (6-7 days) and additionally by staff of the partner Universities (0,5-1 days each). Staff of the related National Parks guided the excursions.
- **ECTS Credits / Workload**: 4 / 120h
- **Place**: The course was offered in the form of a block course and took place for the first time in 2013 in Bialowiesza National Park (Poland). In the following year 2014 in Belarus, Beloveshskaya Pushcha State National Park and in 2015 in Germany, Lower Oder Valley National Park.
- **Time**: The anticipated time frame of the Summer Academy is 10 days (day one for arrival, last day for departure).
- **Documentation**: Each group tutor constantly documented the course progress in consultation with the project leader. After each Summer Academy the involved staff of the protected areas and Universities jointly discussed the results of the respective course

to directly consider lessons learned and best-practice examples for the next Summer Academy. A short resulting interim report was elaborated after each Sumer Academy.

- **Course responsibility:** The specific course coordination and moderation of lectures and excursions of each Summer Academy was conducted by the representative of the respective country where the Summer Academy took place (protected area and University). The other two country representatives functioned as co-moderators, supporting the host moderator. The overall module coordination of the Summer Academy was conducted by the HNEE representative.

3 Results

3.1 Overarching results

3.1.1 Knowledge and abilities

By applying a huge variety of methods from natural to socio-empirical sciences, the students have gained a profound understanding and estimation of the three National Parks in terms of its biodiversity and the efforts to conserve and management the areas. Special emphasis was given on the socio-economic and cultural reality of the regions in which the National Parks are embedded. Challenges have been clearly identified and discussed with the relevant actors and within the cooperating partner institutions.
Even if the predominantly first year students could not count on long lasting experiences on protected area management or any other expertise of the workings group topics, they revealed crucial challenges and contributed in a most innovative manner. New and creative ideas have been brought up and discussed.

3.1.2 Competence

Apart from the unique experience of touching ground in one of the last European old growth forest or in the only Riparian Forest National Park in Germany the intercultural, social and communicative aspects of the Summer Academies have been at least of equal value.
The students as well as lecturers have not only deepened their knowledge of Polish, Belarusian or German culture respectively but as a result of very close team work and discussions within the working groups emerged a mutual understanding of the different perceptions among the three nationalities. The communication within the teams has significantly improved during the Summer Academies in terms of increasing language skills, disappearing timidity and understanding of different cultural perspectives. Self-management skills such as time management, creativity or frustration tolerance have been demanded, especially during periods of intensive group work, but also strengthened.

3.1.3 Impacts and application

Local and regional level

- The realization of the Trilateral Summer Academies achieved a broad visibility not only for the participating National Parks and Universities but also for the local

dwellers and stakeholders. The apparent interest of internationally mixed student groups and accompanying coaches on rural livelihood conditions and attitudes towards the protected area has generally left positive impressions.

- In Poland, some interviewees have been especially and positively astonished by the participation of Belarusian students, being able to accomplish joint project work within an international context.
- During the German Summer Academy some local people even remembered the Summer Academy T-Shirts from the photographs which they have seen in regional newspaper articles and where positively impressed. Here, it has been quite different and interesting in comparison to the Belarusian experiences, where most of the local people visited or interviewed depended directly as employees or indirectly on the National Park. This time the students could approach local dwellers without being previously selected or accompanied by local authorities.

Protected areas level

- The discussions of the findings of the working groups with the staff of the National Park has stimulated some new, interesting and sometimes also conflicting ideas which could be further developed if some continuity and attendance is given (e.g. “World Heritage Fuel Wood Strategy”, “Ecological wildlife strategy” or “Trans-Border Biosphere Reserve Strategy”; for further details see section 3.2 and the respective annual Summer Academy report).
- Beyond doubt, the Summer Academies certainly reinforced personal contacts, communication, understanding and a positive relationship between the staff of the three National Parks. For the German Summer Academy, an additional advantage has been the cooperation with the adjacent protected area in Poland, the “West-Pomerania Landscape Parks”, increasing the complexity of different views on protected area management under different political-administrative framework which can be addressed and discussed differently when students facilitate the exchange of information.

University level

- An enhanced understanding of the higher education systems especially for the lecturers and coaches has been acquired. The observed differences of the educational systems and ways of behaviour between students and lecturers of the respective countries led to intensive discussions among the students and surely stimulated self-reflective processes.
- As the topics of the Summer Academy and the idea of fostering internationalisation are of general interest to the Belarusian State Technological University, staff from Eberswalde University for Sustainable Development has been invited as guest lecturers.
- Stimulated by the Summer Academies first ideas have been discussed of further project work between the Universities and National Parks.

- Internship opportunities have been offered from the National Parks to the students from all Universities.
- An increasing number of students but also University colleagues of the three years Summer Academy Programme still keep contact and are well connected on personal and professional level.

3.2 Activities and results of the Summer Academies

An introductory symposium and additional excursions and lectures for all participants were offered during the Summer Academies for the creation of a general understanding of the specific region, its biodiversity, local population and culture (for detailed information on the Summer Academies course schedules see appendix 1).
The students originated from five different Bachelor study programmes related to forest, environment or conservation (Forestry (HNEE, BTU, BSTU); Environmental Protection (BTU); Tourism and Management (BSTU); International Forest Ecosystem Management (HNEE); Landscape Management & Nature Conservation (HNEE)). The participating students were divided into five internationally mixed working groups (two students per country), deepening their knowledge in the specific topics (as described in section 2.3.1).
Each student group presented the results and conclusions of their work at the concluding international symposium in a 20 min presentation. Afterwards, students, tutors, staff from the partner institutions (Universities and National Parks) as well as invited guest from the region had lively debates on the findings and proposals. Additionally the students summarized their mayor findings and suggestions in short project reports (a selection of presentations can be found in appendix 2).
In the following some selected methods, outcomes and conclusions from the students' work on the five topics are revealed (for detailed information see the country specific Summer Academy reports).

3.2.1 Poland

On September 1st 2013, 30 students (10 from each partner University) and more than 20 lecturers and coaches from Universities and National Parks (3 from Germany, 5 from Belarus and more than 13 from Poland) came together in Białowieża, Poland, to jointly start the first Summer Academy entitled "Protecting World Heritage in Poland – Conservation challenges in old growth forests".

Topic 1 Ecology of flora and fauna in functional forest ecosystems

- establishment of transects in old growth and managed forests
- identification of fungi species
- calculation of diversity indices

➔ students gained profound understanding on the diversity of old growth forest ecosystem, its vulnerability (especially due to invasive species) and its ecological value and function for the region

Topic 2 Forest monitoring systems – research on process-dynamics

- hydrological monitoring and forest inventory by “circle points” and “hectare areas”
- taking of water samples in disturbed and undisturbed plots
- sampling and analysing lichens with a special focus on their importance as bio-indicators

➔ students gained profound understanding on the management of forests:

  - as a result of global warming there's an increase of changes in the composition of ecosystems. Some species are becoming dominant (e.g. hornbeam) while others are pushed away (e.g. spruce and elm).
  - strategies of management must take these changes into account and be aware of the forest's ecosystem and observe its conditions.
  - in general Białowieża National Park (BNP) has a healthy forest ecosystem without disturbances from human activities.

Topic 3 Stakeholder analysis of land use relevant regional actors

- stakeholder interviews with the relevant land use sectors of the region
- interviews with 25 different people belonging to 7 different stakeholder types, e.g. local government, forest administration, local NGOs

➔ conclusions

  - National Park is responsible for «everything» (e.g. roads, scarcity of fuel wood, etc.)
  - great potential for tourism in this region is seen
  - stakeholder don’t recognize a linkage between the BNP and tourism development

➔ future perspectives

  - improve the outside view of the BNP (e.g. public relations)
  - activate relationship between the BNP and the local stakeholders (e.g. dialogues, joint projects)
  - strengthen the role of the Biosphere Reserve, in which the BNP is embedded, in regional development

Topic 4 Socio-economic situation of local population within and outside of the protected area

- interviews with 46 different people from 8 different settlements in the close vicinity (7) or inside of the National Park (1)
- main conflicts discussed
    - limited availability of wood from the Białowieża Forest
    - lack of attractive jobs
    - tourism not developed enough
    - small number of business establishments

➔ suggested solutions

- better access to natural resources in order to reduce rural poverty
- reducing the pressure on natural resources (e.g. solar energy, etc.)
- strengthening the development of (eco-)tourism

Topic 5 Protected area management and strategies

- analysis of management strategies with regard to selected conservation targets and major challenges
- methods applied
    - literature analysis: management plan and maps
    - visit of conservations sites with BNP staff
    - interviews and information: local residents, state foresters, BNP staff
    - use of “Open Standards for the Practice of Conservation” to analyse the situation and possible management strategies for the National Park

- problem analysis
    - no management plan: currently only annual operation plan (ad-hoc management), long term management plan is still pending (ministry)
    - unregulated infrastructural development
    - no buffer zone management and no active management of the surrounding Biosphere Reserve
    - extraction of (fuel) wood, etc.

➔ suggested strategies / activities (partly already existing)

- Enlargement strategy: Adaptation to climate change
- Strengthen bilateral cooperation (PL & BY National Parks)
- Creation of the “World Heritage Fuel Wood Strategy

Participants of the Summer Academy 2013, Białowieża, Poland

3.2.2 Belarus

On August 31st 2014, 30 students (10 from each partner University) and about 25 lecturers and tutors from Universities and National Parks (Germany (2+1), Poland (3+3), Belarus (6+>9)) came together in Belovezhskaya Pushcha National Park, Republic of Belarus, to jointly start the second Summer Academy entitled “Conservation of World Heritage in Belarus – Problems of Conservation of Old-growth Forests”.

Topic 1 Ecology of flora and fauna in functional forest ecosystems

- analysis of two old-growth oak forests (with and without timber extraction)
- analysis of forest structure by applying different methods
- measurement and analysis of deadwood quality and quantity

- identification of fungi species
- collecting invertebrates
- gained profound understanding on the diversity of old growth forest ecosystem, its vulnerability and its ecological value and function

➔ a diverse forest is more sustainable because it has a lot of organisms which make the forest more adaptive to pests and other stress factors

➔ dead wood is the base of biodiversity in old growth forests
➔ it is necessary to leave more dead wood in forests to guarantee a sustainable management over a long period of time
➔ the diversity of birds and invertebrates of an unmanaged forest is also influencing the managed forest nearby in a positive way

Topic 2 Forest monitoring systems – research on process-dynamics

- focus on the effects of the accumulation of dead wood, impact of hoofed game on growth and succession in the core zone of the National Park and disturbed forests
- inventory of age, condition (5 categories), natural regeneration
- comparison of own measurements and findings with scientific data from long term studies

➔ composition of tree species in both plots is equal, while their proportion differs significantly
➔ total amount of dead wood is about 100 m^3/ha; the amount of fresh fallen dead wood is only 14 m^3/ha => indication for stable forest ecosystem, typical for forests in National Park
➔ the large proportion of older dead wood is of great value for the ecosystem and its biodiversity (habitat for various fungi and insects, etc.)

Topic 3 Stakeholder analysis of land use relevant regional actors

- stakeholder interviews applying semi-structured interviews and coding transcribed interviews
- interviews with 27 different people belonging to 11 different stakeholder types, e.g. local authorities, foresters & hunters, tourism workers

➔ forest management
  - there are few reported conflicts regarding forest management
  - through providing campaigns and more information to local people about the importance of protected areas, there could be a chance to reduce illegal cuttings
  - organization of meetings with local people to inform them about National Parks policies

➔ tourism
  - more trips with ecological focus
  - provide training for scientists that are asked to guide tours
  - use and train additional ecological guides among locals

Topic 4 Socio-economic situation of local population within and outside of the protected area

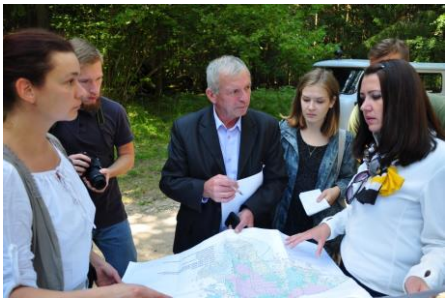
- semi-structured interviews with 37 pre-selected local villagers in the surroundings and inside of the National Park
- investigation of the socio-economic situation (income, land use types, (environmental) education, etc.) of local population

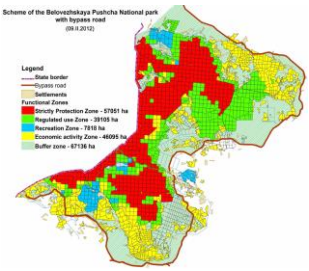


➔ students' suggestions
  - further regularly surveys
  - publishing of the results (e.g. in newspaper)
  - post-box for ideas and critics of local population
  - reintroduce public meetings about future of National Park
  - to rise the amount of allocated wood

Topic 5 Protected area management and strategies

- literature analysis: management plan and maps
- visit of conservations sites with BPNP staff
- interviews and information: local residents, state foresters, a scientist from BirdLife Belarus and Frankfurt Zoological Society working in a project together with BPNP, student working groups 1-4, BPNP staff
- use of "Open Standards for the Practice of Conservation" to analyse the situation and possible management strategies for the National Park


Discussing forest management strategies inside the National Park

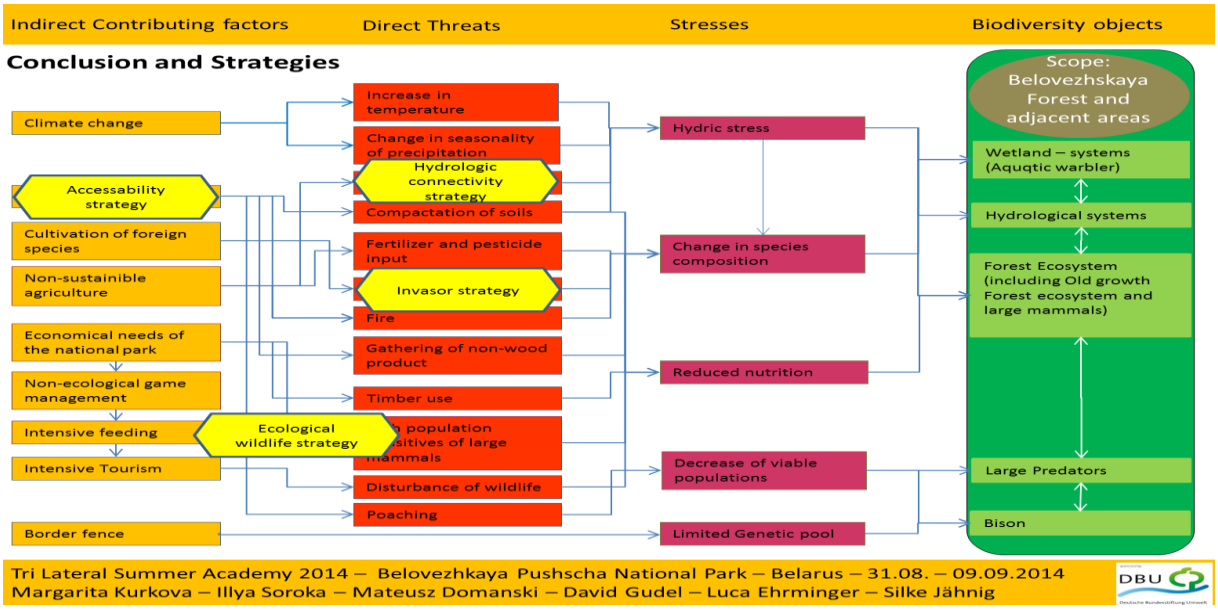


Zoning of the National Park


Road infrastructure inside the National Park

- problem analysis
  - climate change driven increase in temperature and change in seasonality of precipitation
  - compaction of soils
  - pesticides and fertilizers

- invasive species
- fire
- gathering of non-wood products
- extraction of timber
- high population density of large mammals, etc.



Conceptual model and inserted strategies for threat reduction

➔ Development of a strategy to more sustainably control access into the National Park

➔ Development of a strategy to maintain or restore hydrological connectivity and thus functional ecosystems

➔ Development of a strategy to effectively manage or even eradicate invasive species

➔ Development of a strategy to manage more ecologically wildlife inside and outside of the National Park

Participants of the Summer Academy 2014, Belovezhskaya Pushcha National Park, Belarus

3.2.3 Germany

On August 30th 2015, 30 students (10 from each partner University), 21 lecturers and tutors from Universities (Poland (4), Belarus (3) Germany (14), 10 National Park staff members (Poland (2), Belarus (1) Germany (7)) and numerous symposium-participants from local and regional politics, administrations and civil society came together in Criewen, headquarters of the Lower Oder Valley National Park, to jointly start and conduct the third Trilateral Summer Academy entitled “Back to the wild? Restoring wilderness in riparian forest ecosystems”.

Topic 1 Ecology of flora and fauna in functional riparian ecosystems

- analysis of secondary data (literature review)
- inventory flora and fauna species in different ecosystems: riparian grassland, riparian grassland with thickets, riparian grassland with canals, Oder River (sandbank & inland waterbodies), lakes
- field data collection: reconnaissance transect, point transect, visual encounters, plot sampling, interviews

➔ the Lower Oder Valley National Park is quite rich with entomo-fauna as well as in avifauna, both in quality and quantity while ichthyo-fauna is rather poor in species

➔ some species have a very close relationship with the structure & composition of vegetation, so for this region, their future relies completely on anthropogenic vegetation management

➔ the Lower Oder Valley National park is a very biodiverse place. But it can only exist, as it does, because of the human management. Without it, many species would disappear. The question is, if the slogan of the world-wide National Park association “let nature be nature” is adaptable to this National Park

➔ the PA management should decide if they want to go for wilderness and become a “real” National Park in future or if they want to conserve a certain and fixed set of species which would imply a permanent active management of the ecosystems and fighting against natural succession and thus also against the development of wilderness. As from the students site, we would opt for wilderness development.

Topic 2 Ecosystem monitoring – research on process dynamics

- collecting information about changes to the structure and function of ecosystems
- Sample plots: selection of 14 different sample plots, containing as many different ecosystem types as possible
- Soil sampling: measuring the pH-value of the soil, describing the main soil type and its characteristic layers
- Forest inventory
  - radius of 5-10m to measure a representative quantity of trees
  - Identifying tree species

- breast height diameter (bhd)
- in two investigation plots of the regeneration site in the so called “Criewen Polder”, all the saplings on 1m² have been recorded

➔ sandy soils were found on the floodplain areas and clay in depressions. These depressions are characterized by grasses because of the soil wetness and high nutrient concentration.

➔ Observed shrubs are manly *Salix fragilis* and *Salix alba*. The next stage is an open stand of *Populus laevis* and *Alnus glutinosa* trees and we noticed that the water level becomes lower. This part of riparian forests belongs to softwood floodplain forests. The highest elevated stand is characterized by *Quercus robur*, *Populus alba* and *Populus nigra*, forming the hardwood floodplain forests. We can observe a direct connection between water level and tree species composition.

➔ For the future, we can predict that different species of *Salix* sp. as pioneer tree species will spread but only on sandy soils because of requirements in aeration, light and low nutrition content. Most riparian tree species can only spread in the case of high flood events and sedimentation of sand. *Quercus robur* and *Populus alba* will not spread into lower elevations because of the level of water, but will remain at higher altitudes.

Topic 3 Stakeholder analysis of land use relevant regional actors

- Conducting interviews with 11 different stakeholder types, e.g. shipping and waterways office, farmers, tourist information office staff
- Interview questions:
  - What is your job and how are you connected with National Park?
  - What is your own attitude towards the National Park?
  - What are the main problems?
  - What would you like to change?
  - What do think about the cooperation between Germany and Poland?
- Transcription and analysis of all interviews

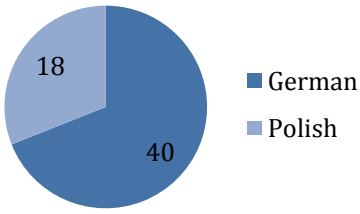
➔ Main conflicts
  - mainly communication problems „beginning with birth defect“ – locals did not feel integrated in the process of National Park creation
  - different and conflicting stakeholder interests (especially farmers and fisherman vs. National Park, but it seems to become much better recently)
  - “Beaver-Problem”: Species protection lead to population growth inside the National Park
  - No sufficient regulation of the wildlife management
  - Problem between flood prevention and natural dynamics in the National Park
  - Reestablishment of the polder system on polish side – fostering local economy or destroying wilderness?

➔ Recommendations and Strategies for Stakeholder Dialogs:
  - Payments / incentives for the farmers to achieve more compatibility
  - Implementation and communication of wildlife management

- Foster (guest) exchange between German and Polish side

Topic 4 Socio-economic situation and attitude of local population towards the National Park Lower Oder Valley in the surroundings of the protected area

- Developing a semi-structured interview with three main topics of interest:
  - Livelihood around the National Park and attitudes towards the National Park management
  - The impact of tourism on the region
  - Knowledge and attitude of locals towards climate change
- Conducting 58 semi-structured interviews with local dwellers in the surroundings of the National Park
- Analysis and visualisation of interview results



➔ People confirmed a better acceptance of the National Park than in former times and the importance for regional development

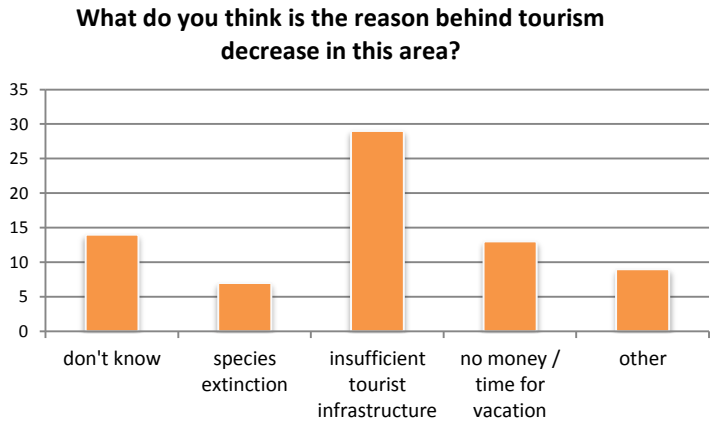
➔ The future vision of the region in combination with the National Park is seen as rather positive

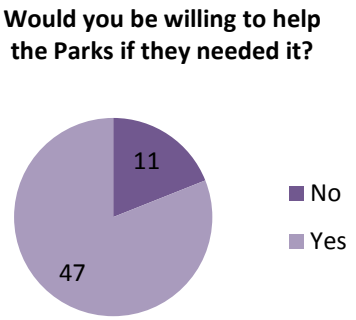
➔ More than half of the interviewed locals believe, that the National Park has a positive role in reducing impacts coming from climate change

➔ Tourism is found as the most important income generating sector for the region

➔ The National Park should try to make better use of the expressed willingness of local people to participate in National Park activities

➔ The National Park should try to strengthen the improvement of touristic infrastructure (e.g. restaurants, accommodation) and special touristic offers





Topic 5 Protected area management and strategies

- analysing and comparing different management strategies of two protected areas, the Lower Oder Valley National Park (LOVNP) in Germany and the West-Pomerania Landscape Parks (WPLP)
- main problems revealed:
    - The two protected areas have quite divergent goals which might not always lead to coherent management strategies and activities on both sides of the Oder river but is not regarded as a major obstacle for the PA administrations
    - Risk of reestablishment of the Polish polder system: would not only destroy the oldest and most valuable wilderness areas on the Polish border but also negatively impact the German National Park
    - There are still Natura 2000 sites (= maintaining the status) within areas which are assigned as strict protected zone (1b) (= no active management, development of wilderness)
    - Difficult communication between “traditional” land users (especially farmers and fishermen) and National Park administration

➔ To avoid the reestablishment of the Polish polder system

- Raise awareness among the local people in Poland and Germany
    - By emphasizing the benefits (especially for ecotourism development) for the whole region, if the wilderness areas exist and further develop into a unique spot for Germany and western Poland
    - By political lobby work
- Raise the conservation status of the West-Pomerania Landscape Parks, maybe becoming an UNESCO Biosphere Reserve, to impede the planned infrastructural development

➔ Natura 2000 vs. National Park

- The National Park should not try to maintain open landscapes for the sake of some species adapted to these habitats in the strictly protected zone (1a and 1b), if at the same time, succession and development of wilderness need to be fought. Threatened species of open areas and grasslands will possibly move and survive in other areas in the vicinities of the National Park such as

Biosphere Reserve Schorfheide-Chorin or Nature Park “Stettiner Haff”. Communication and joint project work with the other PAs could be strengthened.

➔ Improve communication between land users and National Park administration.

Participants of the Summer Academy 2015, Criewen, Lower Oder Valley National Park, Germany

3.2.4 Comparative findings and conclusions for protected area management

The data and information students groups gathered on the topics 1 to 4 were picked up as valuable input by the groups working on the fifth topic on protected area management and strategies. The 5th working groups used and combined the work of all other groups, concluding strategies concerning the management of the respective protected areas in Poland, Belarus and Germany. The following table 4 gives an overview on the mayor findings with regard to the problems identified and possible solutions suggested by the students. Even if the situation analysis remains incomplete and based on hypothesis, given the little time and the students not being experienced experts in protected area management, some interesting and possibly also innovative ideas for further protected area management have been revealed.

Table 4: Comparative mayor findings and recommendations on protected area management in Poland, Belarus and Germany

	Poland 2013	Belarus 2014	Germany 2015
Problem analysis Major threats and risks	• no management plan: currently only annual operation plan (leading to ad-hoc management), **no long term strategic management** existent • **unregulated infrastructural development** • **no buffer zone management** and no active management and relationship with the surrounding Biosphere Reserve • improper land use • extraction of (fuel) wood • poaching • **bad economic situation for local population** / lack of money – increases pressure on forests • **conflicts with local population and stakeholders**, especially forestry sector • **invasive species** in- and outside of the National Park • calamities (bark beetle) inside and outside of the National Park • **border fence** (large herbivores especially affected) • **climate change** – especially causing droughts and more frequent calamities	• **climate change** driven increase in temperature and change in seasonality of precipitation • **drainage systems** • compaction of soils, **disturbed connectivity of hydrological system** • **invasive species** • **fire** • **high population density of large mammals** • disturbance of wildlife	• risk of **reestablishment of the Polish polder system**: would not only destroy the oldest and most valuable wilderness areas on the Polish border but also negatively impact the German National Park • the **two protected areas** adjacent to the Oder river (National Park in Germany and Pomerania Landscape Parks in Poland) have divergent goals, leading to **incoherent management strategies** on both sides of the river • **conflicting Natura 2000 sites** (= maintaining the status) within areas which are assigned as strict protected zone (1b) (= no active management, development of wilderness) • still difficult **communication** between “traditional” land users (especially farmers and fishermen) and National Park administration

Strategy development **Main recommendations**	**Forster existing strategies** • **enlargement strategy** for the National Park and surrounding area: adaptation to climate change • strengthen **bilateral cooperation** (Polish & Belarusian National Parks) -> more coherent programmes on e.g. invasive species eradication, European Bison, etc. **Additional proposals** • need for proactive strategies, **creating a long term vision** • creation of the "**World Heritage Fuel-Wood-Strategy**" • development of a **communication strategy** between National Park and **local population** • **eco-tourism strategy**: locals benefiting from National Park • **improve buffer zone management** and relationship with the surrounding Biosphere Reserve	**Forster existing strategies and additional proposals** • development of a strategy to maintain or **restore hydrological connectivity** and thus functional ecosystems -> adaptation to climate change • development of a strategy to effectively manage or **eradicate invasive species** • development of a strategy to **manage wildlife** more ecologically inside and outside the National Park (also by using and **accepting natural predators**) • development of a strategy to more sustainably control access into the National Park	**Forster existing strategies and additional proposals** • strategy to **avoid the reestablishment of the Polish polder** system: ▪ **awareness campaign** among local people in Poland and Germany by emphasizing benefits (especially for ecotourism development) for the whole region, if the wilderness areas exist and further develop into a unique spot in the area ▪ **political lobby work** (partly already ongoing) ▪ **raise conservation status of the West-Pomerania Landscape Parks**, maybe becoming an UNESCO Biosphere Reserve, to impede the planned infrastructural development • **Natura 2000 strategy** ▪ the National Park should not try to maintain open landscapes for the sake of some species adapted to these habitats in the strictly protected zone (1a and 1b), if at the same time, succession and **development of wilderness** need to be fought (threatened species of open areas and grasslands will possibly move and survive in other areas in the vicinities of the National Park such as Biosphere Reserve Schorfheide-Chorin or Nature Park "Stettiner Haff") ▪ strengthen **communication and joint project work with the other protected areas** in the surroundings • improve **communication between land users and National Park** administration ▪ the already great work on creating acceptance must be continued ▪ **involve local people and stakeholders** with well-defined tasks to reduce conflicts and foster communication and understanding between land users and National Park administration

3.3 Communication of project contents and outcomes

The Trilateral Summer Academy project involved and addressed people with different backgrounds:

- active participants of the Summer Academies
- involved stakeholders and local population
- "uninvolved" local population reached by different media

In the following we will summarize and analyse the number of people that got in touch with the Summer Academies' activities in one or another way.

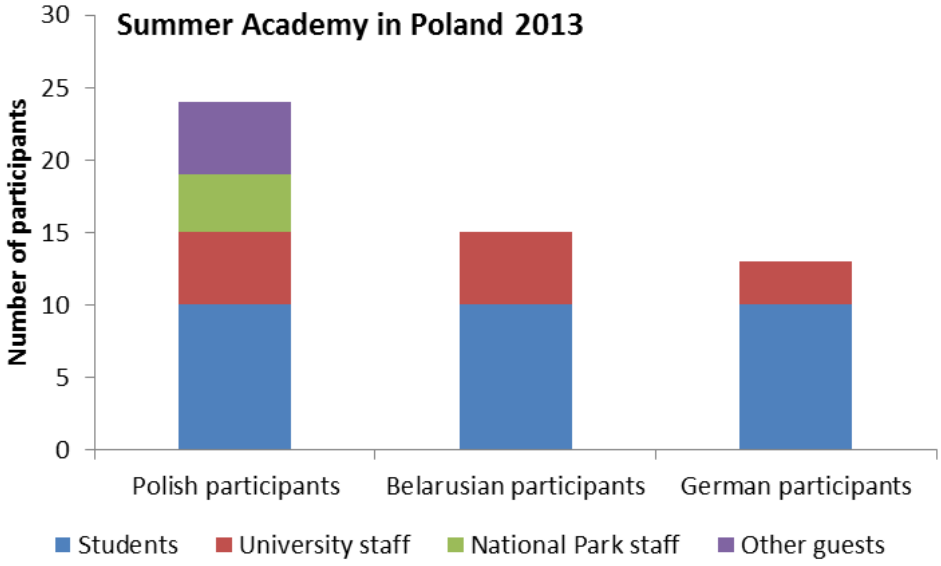
Participants of the Summer Academies

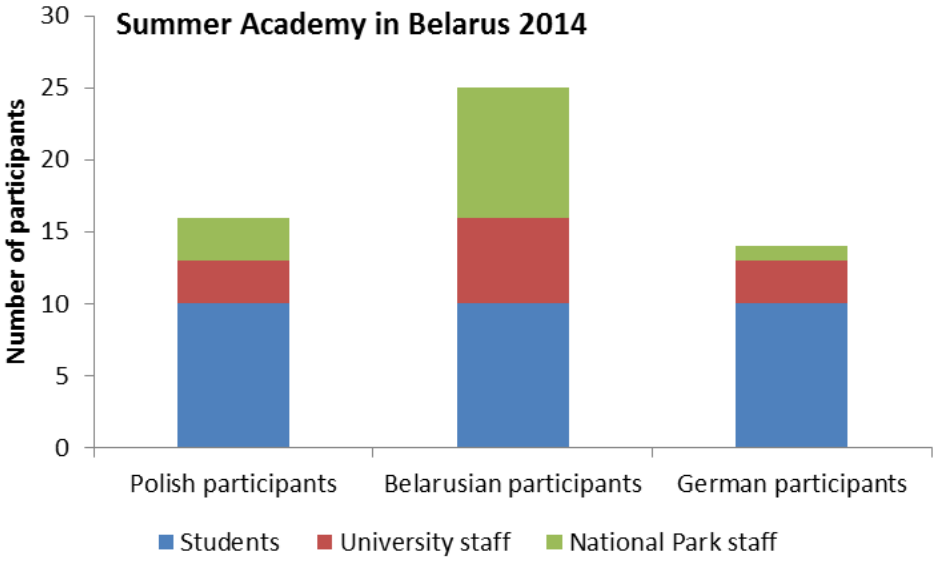
About 200 people participated in Summer Academy Course over the three years it took place. 90 of them were students forming the focal group of the whole project. They were guided and accompanied by numerous Polish, Belarusian and German staff members from the involved Universities and National Parks. For detailed information see table 5 and figure 1.

Table 5: Participants involved in the Summer Academies 2013 – 2015

	Polish Participants			**Belarusian participants**			**German participants**		
year	2013	2014	2015	2013	2014	2015	2013	2014	2015
Students	10	10	10	10	10	10	10	10	10
University staff	5	3	4	5	6	3	3	3	14
National Park staff	4	3	4		9	1		1	7
Other guests (e.g. local authorities, Scientists)	5		1						7
Total	**24**	**16**	**19**	**15**	**25**	**14**	**13**	**14**	**38**

In the figure below the different groups of participants and their dimensions (number of participants of each nationality) are shown for all three Summer Academies. The first Summer Academy in Poland in 2013 attended a number of members of Polish local authorities and guest scientists (here named as "other guests"). Likewise in Germany in 2014 where both Polish and German participants not belonging to the University or National Park staff took part in the implementation of the Summer Academy. During the Belarusian Summer Academy a high number of National Park staff was involved in the training of the course.





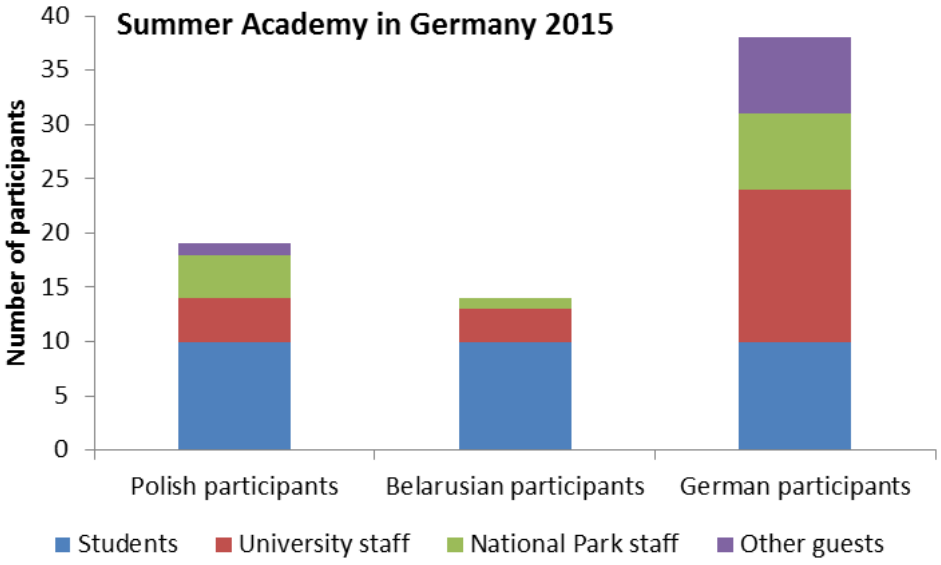
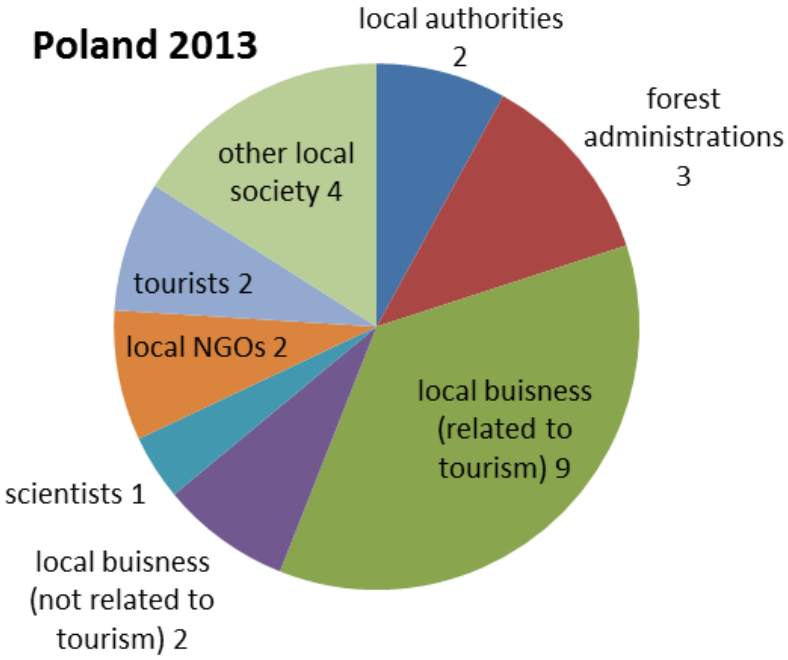


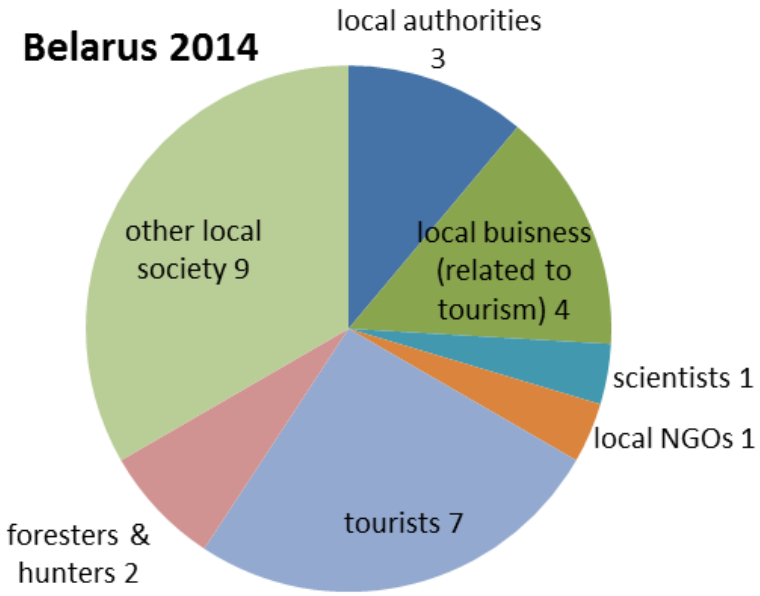
Figure 1: Number and affiliation of Polish, Belarusian and German participants of the three Summer Academies in Poland in 2013, Belarus in 2014 and Germany in 2015.

Involved stakeholders and local populations

During the undertaking of the group work, especially of those student groups concerned with topics 3 and 4, numerous interviews were conducted involving a great variety of stakeholder groups and local dwellers (see figures 2 and 3). These people did not only give their input on the students' work but were also invited to the final symposia to take part in the lively discussions of the students' results and conclusions.

While in Poland in 2013 many local tourism business entrepreneurs were interviewed, tourists and local dwellers formed the biggest interview-group during the Belarusian Summer Academy and in Germany businesses unrelated to tourism, like fishermen and local industry, were the major stakeholder group being interviewed (figure 2).





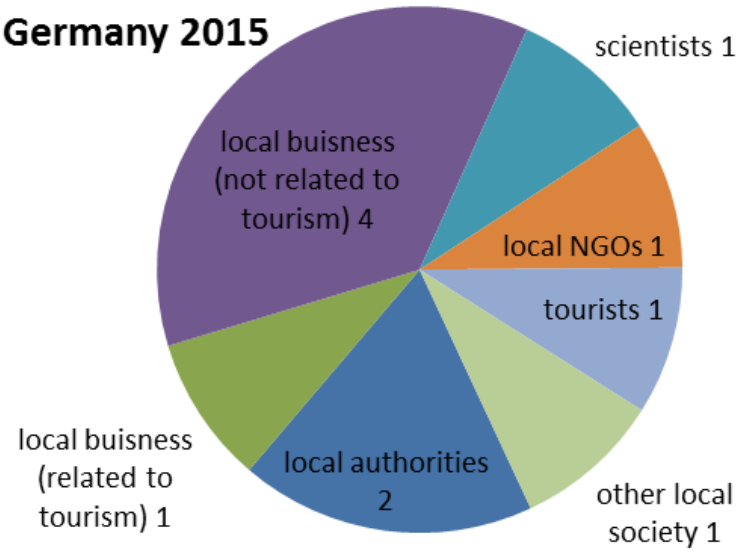


Figure 2: Number of interviews with different stakeholder groups conducted during the three Summer Academies (total 63 interviews over all three years) for *Topic 3 Stakeholder analysis of land use relevant regional actors*.

Figure 3 shows the number of semi-structured interviews the student groups conducted during the three years of the Summer Academy Project, being highest during the last Summer Academy in Germany in 2015 and lowest in Belarus in 2014 where the interview partners have been pre-assigned.

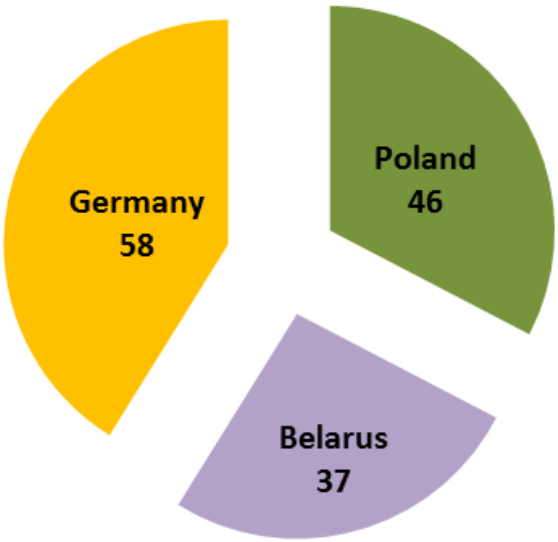


Figure 3: Number of semi-structured interviews with local dwellers (total 141 over all three years) conducted for *Topic 4 Socio-economic situation of local population within and outside of the protected area* in the three different countries.

Local and regional population reached by different media

Over the years a number of local and regional radio stations, newspapers and television featured the Summer Academies and their participants drawing the attention of the local and also regional population towards the activities and meanings of the Summer Academies. The

information was generally perceived in a very positive manner and increased the interest and hospitality especially when students approached local dwellers for their interviews.

4 Critical reflection of the project

4.1 Beneficial and repressive facts

The Trilateral Summer Academy has been a huge success, thanks to the enormous efforts of all cooperation partners. According to all comments received during the Summer Academies an extraordinary positive evaluation became evident. This applies to the students as well as to the colleagues from all involved partner institutions.
In general the expectations from students and colleagues of the Summer Academy have been excelled every single year. Nevertheless, there are still possibilities for further improvement, if a similar project is intended to be realized in future. But this shall not diminish the overall quality of the Summer Academy at all.
In the following special highlights and further benefits are listed giving an overview over the many positive experiences but also listing some obstacles that occurred during the execution of the three events and the preparation processes.

- **Highlights**
  - The bonfire event at the very beginning of the Summer Academy has been very helpful to bring together students from different countries and cultural backgrounds.
  - The impact and range of influence has exceeded by far the initially expected and expressed results formulated in the already ambitious goal description of the project proposal which was especially uncertain with regard to working groups 3 (stakeholder analysis) and 4 (socio-economic survey).
  - The final Polish-Belarusian-German friendship evenings have been magnificent events and served for celebrating a successful but also demanding Summer Academy. Positive conclusions and ideas for further development have been shared in an open and friendly atmosphere and the mutual estimation on personal and professional level has emphatically been expressed.

- **General benefits**
  - Significant knowledge gained on the function and importance to conserve old growth forest like the case studies Białowieża National Park and Belovezhskaya Pushcha National Park and riparian forest ecosystems and recreation of (lost) wilderness like the case study Lower Oder Valley National Park.
  - Very skilled interpreters for the communication between all participants and with locals have been key to the success of the Summer Academy.
  - Increase of social, intercultural and personal competences.
  - Friendship has been developing or deepened between students and colleagues from different countries and institutions.

- Some innovative ideas have emerged and can be used by the National Park administration (see summarized findings and recommendations above and more detailed at the project reports and project presentations).
- Through the young and sometimes even naive look and questions of the students, some delicate topics have been revealed and carefully analysed. Professionals and experts from the place would not have always been in conditions to ask this kind of questions.
- The Summer Academy advertising products like T-shirts, caps or mugs turned out to have a much bigger and positive impact than initially thought. On one hand, local people easily recognized the Summer Academy participants from newspaper photos and approached them with great interest. And on the other hand, these products fostered the feeling of ownership and affiliation among all Summer Academy participants and led to a long-lasting visibility of the project.
- Finally, the constructive and adaptive support from DBU and also Eberswalde University for Sustainable Development has facilitated the management of the project.

➢ **Country specific benefits**

- The excellent infrastructure for working and living in Poland and Belarus has been very supportive.
- In Poland the Vice Mayor of Hajnówka (largest town in the region) was participating in the final symposium. He was positively astonished by the critical and constructive results revealed by the students. Also additional guests from Russia (Perm State University) have been visiting and observing the Summer Academy and would like to participate in such an event in the future.
- The ecological-cultural-historical excursion to Berlin during the German Summer Academy was a great opportunity to not only explain about the necessity and advantage of urban green and forest in big and growing cities. But it was especially about how Germans deal with their difficult history in present times, which also led to some irritation and afterwards discussion within the group of students (about racism in general and especially when we explained the “Memorial to Homosexuals Persecuted Under Nazism”).
- The isolated, basic but good infrastructure of the “Wilderness School” in Germany right at the boarder of the National Park has been supportive to create a very good working atmosphere and avoided too much distraction.
- On the 23rd of July 2014, a group of non-Summer Academy related Belarusian students from our partner University from Minsk (Belarusian State Technological University (BSTU)) show has been invited to visit the Faculty of Forest and Environment (HNEE, Germany). The programme covered an introduction of the University and Faculty, discussion about the structure, content and philosophy of the study programmes, excursions and a meeting and lively exchange with the HNEE-students, especially former and future Summer Academy participants.

In order to improve such endeavours, also some obstacles have been documented and openly discussed among the project responsible partners in the course of the Summer Academies.

- **Main obstacles**
  1. Some participants, mainly students, showed severe English language problems resulting in difficult working situations and insufficient exchange between participants.
  2. Even if several of the interviewed stakeholders and rural dwellers have registered for the final symposia, at the end, their participation was relatively low and a better attendance would have been desirable. However the attendance could be improved during the last year by handing out printed invitations in advance. In general, the overall attendance at final symposia still was very good.

- **Obstacles that could (partly) be solved over the years**
  - Some participants had severe English language problems. This, consequently, led to communication barriers in some of the students working groups. Only with the strong support from interpreters and due to very anxious students, these obstacles have been tackled.
  - Teamwork has sometimes been difficult, as not all students are used to this kind of free project based teaching methods with individual and group wise coaching and peer learning in student groups. The absence of clearly defined rules and control led to some weaknesses in teamwork. However teamwork improved as some guidelines and small workshops were implemented.
  - After the initial definition of the examination form and grading system, new discussions on the grading scheme evolved in the beginning of each Summer Academy. Therefore, the evaluation matrix was improved and explained in detail before it was used for the examination among the evaluating tutors. It finally facilitated a lot for the grading process between the up to 12 evaluating tutors from three different countries.

- **Country specific obstacles**
  - During the Polish Summer Academy it turned out, that some official documents have not been discussed and checked before printing (e.g. with regard to the logos of all involved intuitions), which led to time intensive discussions on the required modifications and reprints of the documents.
  - After the Polish Summer Academy took place: The modified DBU budget plan, according to the expressed wishes of the Polish colleagues, has not been used and the money has only partially been spent. The final accounting process has been a slightly difficult process as everyone was going back to daily business and was not attending thoroughly enough the financial and final administrative issues.
  - In Belarus, the interview partners for the social surveys have been prearranged by the authorities and not freely selected by the student groups. In addition, all villagers

of the vicinities of the protected area are directly depending on the National Park, but it also reflects the situation in place and still delivered highly valuable outcomes.

- Due to a lack of internet coverage at the "Wilderness School", the German accommodation facility during the Summer Academy 2015, some participants "suffered" from slow or no internet connection, especially when preparing the presentation for the final symposium. Although we encountered the same problems in Poland and Belarus, the expectation from the Polish and Belarusian guests towards internet connection and coverage in Germany was much higher than we could provide (see also below).
- The German Summer Academy accommodation has not been as comfortable as in Poland and Belarus, where the participants stayed in hotels. But this was basically a problem with too high expectations, even if the "Wilderness School" conditions were communicated several times beforehand via Email and photos. It seemed that all Polish and Belarusian guests expected much more luxury conditions when coming to a rich country like Germany – which could also be seen as a "Pro" if not all German stereotypes have been met…

4.2 Lessons learned and suggestions for improvement

- There is a need to put more emphasis on good language skills of the selected students and also assigned tutors. As it turns out to be difficult to ensure a good command of English among all participants, one should adapt to this situation with the help of highly skilled interpreters and consider balanced language skills for the composition of working groups. It is vital to ensure, that at least one person from each country with good command of English is present in each group to foster group building and work. This topic has been discussed among the tutors during and after the Summer Academies and it turned out that it is much more challenging than initially thought to attract enough students who do not only speak English but are also highly motivated (especially considering the execution of the course during the semester break, see below).
- The identification of a suitable time for the execution of the Summer Academies has not been an easy task. The finally chosen time during the semester breaks let to the fact that even generally interested students were out for holidays or had to gain money for their living and studying and thus could not participate. Therefore it is recommended to carefully choose a different time slot for such an event to attract more suitable and motivated students (e.g. at the beginning or end of the semester breaks (of each country!) or even during a regular study semester, if the course is accounted).
- A short introduction to team building gives valuable support for group work in the initial phase, which has been implemented for the last two Summer Academies.
- More or other incentives are needed to insure the public participation at the final symposium (especially interviewed local dwellers and stake holders). The printed official invitations distributed during the last Summer Academy in Germany have

improved the situation but have still not been sufficient to activate a larger share of the interviewees contacted during the Summer Academy.

- All official documents (e.g. certificates, programmes, invitations etc.) need to be revised and if necessary discussed among all project responsible partners before printing and distributing.
- Before the final symposium takes place, the formal framework should be explained and how the grading process is going to be executed.
- Administrative and financial issues need to be discussed already in the beginning of the Summer Academy and all invoices should as far as possible be prepared and collected during the Summer Academy in order to permit an efficient processing afterwards.
- Summer Academy advertising products like mugs, caps and especially T-shirts should be planned and implemented in the project calculation from the very beginning.
- An overall anonymous student evaluation for each of the Summer Academies was missing. It would have been useful in order to receive feedback from all international students for the continuous improvement of the project. As for now, only short feedback discussions have taken place, organized individually by some of the Universities.
- In order to enlarge the possible impact of the Summer Academy, a final meeting to discuss and conclude the project between all project responsible partners from National Parks and Universities would have been desirable and should have been envisaged. Even if short evaluations took place after each Summer Academy, a general evaluation of the overall project would strengthen the future cooperation and possible continuation of joint initiatives. In addition, it would be highly interesting to see, if some of the results and recommendations given by the students were taken up by the National Park administrations. A critically reflection of the ideas revealed during the Summer Academies within the group of project responsible partners might unfold some new perspectives on protected area management. Also for the University partners, a thorough contemplation of the methods and didactics applied would have been advantageous.
- The administration and execution of the project has been much more time intensive, especially for the project responsible persons, than initially estimated. Therefore, including a (part time) position of a project manager into the project budget would be highly desirable.

5 Recommended literature on methods of ecosystem and protected area management

Ibisch, P.L. & P.R. Hobson (eds.) 2014. MARISCO-Guidebook. MARISCO Adaptive MAnagement of vulnerability and RISk at COnservation sites. A guidebook for risk-robust, adaptive and ecosystem-based conservation of biodiversity. Centre for Econics and Ecosystem Management, Eberswalde. (http://www.marisco.training/resources/manual/)

CMP (The Conservation Measures Partnership) 2013. Open standards for the practice of conservation. Version 3.0. Available from http://cmp-openstandards.org/wp-content/uploads/2014/03/CMP-OS-V3-0-Final.pdf

6 Appendix

Appendix 1: Course schedules

- Summer Academy in Poland 2013
- Summer Academy in Belarus 2014
- Summer Academy in Germany 2015

Appendix 2: Selection of student presentations given at the final Summer Academy symposia

- Belarus 2014 – Topic 1 *Ecology of flora and fauna in functional forest ecosystems*
- Germany 2015 – Topic 2 *Forest monitoring systems – research on process-dynamics*
- Belarus 2014 – Topic 3 *Stakeholder analysis of land use relevant regional actors*
- Poland 2013 – Topic 4 *Socio-economic situation of local population within and outside of the protected area*
- Poland 2013 – Topic 5 *Protected area management and strategies*

Appendix 1: Course schedule

Summer Academy in Poland 2013

Summer Academy

Protecting World Heritage in Poland
Conservation challenges in old growth forests

01.-10.09.2013
Białowieża National Park
Poland

Course schedule

Day 1 01. 09. 2013	
16.00 – 20.00	Arrival of the participants Registration in the hotel of the Bialowieza National Park
20.30-21.30	Dinner

Day 2 02. 09. 2013	
All participants, The Main conference hall of the BNP	
8.00 – 8.30	Breakfast
9.00 – 10.00	Official welcome to the Summer Academy in the UNESCO World Heritage "Belovezhskaya Pushcha / Białowieża Forest" Welcome: Sławomir Bakier – Dean, Faculty of Forestry in Hajnówka (FFH) Mirosław Stepaniuk – Director of Bialowieża National Park (BNP), Renata Krzyściak-Kosińska (BNP) Christoph Nowicki – Head of Coordination & Development Project responsible, Eberswalde University for Sustainable Development (HNEE) Presentation of the BNP (for 15 min) - Renata Krzyściak-Kosińska
10.00-11.00	Presentation about Partners University and invited Guests Belarus - Aleh Bakhur German – Christoph Nowicki Russia – Dmitriy Andreev Poland – Joanna Pietrzak
11.00 – 10.20	Introducing to lecture: Białowieża Forest – prestige and obligation – Renata Krzyściak-Kosińska, Director of BNP (BNP)
11.30-12.30	Legal basis for nature protection in Belarus (guests of Belarus) Legal basis for nature protection in Germany (guests of Germany) Legal basis for nature protection in Russia - Dmitriy Adreev - Perm State University (PSU) Legal basis for nature protection in Poland – Joanna Pietrzak (FFH)
12.30-13.00	Problems of forestry in the region of Bialystok – Tomasz Oszako, BUT, Institute of Forest Research in Sękocin Stary

13.00 – 14.00	Lunch
14.30 – 15.00	Introduction to Summer Academy – Christoph Nowicki Course programme – Renata Krzyściak-Kosińska Tasks – Christoph Nowicki
15.30 – 16.30	Introducing lectures to all thematic groups: expectations, methods (group tutors) Christoph Nowicki (leader), Sławomir Bakier (leader) Group 1: Michał Sawoniewicz Group 2: H. Chomutowska Group 3: Martin Welp and Renata Krzyściak-Kosińska Group 4: Martin Welp and Marek Martyniuk Group 5: Małgorzata Karczewska and Christoph Nowicki
16.30 – 17.30	Splitting into thematic groups Christoph Nowicki (leader) Sławomir Bakier (leader)
	Recreation in Palace Park 17.45 - meeting on the front of the BNP, travel to Hajnówka
18.00-24.00	Dinner – bonfire, Hajnówka, Forest District in Hajnówka, The State Forests National Forest Holding.

Day 3 **03. *09. 2013***	
All participants	
8.00 – 8.30	Breakfast 8.45 – meeting on the front of the BNP, travel to The European bison Show Reserve
9.00 – 13.00	Biology and Ecology of the European Bison (lecture and visit to the animal park), Katarzyna Daleszczyk, BNP
13.00 – 14.00	Lunch
14.00 – 18.00	Cultural programme, recreation in the area
19.00	Dinner
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors, non-binding offer)

Day 4	
All participants	
7.00 – 7.45	Breakfast
8.00 – 13.00	Biological diversity and ecology of the primeval forest - visit to the strictly protected area of the Park (boots required, mosquito and tick repellents)
13.00 – 14.00	Lunch
14.30 – 18.30 *The Main conference hall of the BNP*	
14.30 – 15.15	Selected aspects of the natural ecosystems – mammals (Karol Zub, The Mammal Research Institute of the Polish Academy of Sciences in Białowieża)
15.15 – 16.00	Selected aspects of the natural ecosystems – birds (Karol Zub, The Mammal Research Institute of the Polish Academy of Sciences in Białowieża)
16.00 – 16.15	Break
16.15 – 17.00	Selected aspects of the natural ecosystems – reptiles and amphibians (Renata Krzyściak-Kosińska, BNP)
17.00 – 17.30	Selected aspects of the natural ecosystems – saproxylic insects (Jerzy Gutowski, European Centre for Natural Forests in Białowieża)
19.00	Dinner
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors, non-binding offer)

Day 5	
All participants	
8.00 – 9.00	Breakfast
9.00 – 10.00	Meeting of the thematic groups and their tutors, plan of work, tasks within groups
10.00 – 13.00	Working in the groups
13.00 – 14.00	Lunch
14.00 – 18.00	Working in the groups
19.00	Dinner
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors, non-binding offer)

Day 6	
All participants	
7.00 – 7.45	Breakfast
8.00 – 17.00	Excursion to the Biebrza National Park
19.00	Dinner
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors, non-binding offer)

Day 7	
All participants	
8.00 – 9.00	Breakfast
9.00 – 9.30	Meeting of the thematic groups and their tutors, plan of work, tasks within groups
9.30 – 13.00	Working in the groups
13.00 – 14.00	Lunch
14.00 – 18.00	Working in the groups
19.00	Dinner (after dinner students

Day 8	
All participants	
8.00 – 9.00	Breakfast
9.00 – 9.30	Meeting of the thematic groups and their tutors, plan of work, tasks within groups (Nature Education Centre)
10.00 – 13.00	Working in the groups (preparing presentations)
13.00 – 14.00	Lunch
14.00 – 18.00	Working in the groups (preparing presentations)
19.00	Dinner

Day 9	
All participants	
The Main conference hall of the BNP	
09.00 – 09.30	Tee/Coffee reception
09.30 – 09.45	Welcome to the “Summer Academy Student Symposium” (*invited guests from National Park staff, stakeholders, local people, municipalities, etc.*) – Slawomir Bakier, Christoph Nowicki
09.45 – 12:15	1. Ecology of flora and fauna in functional forest ecosystems 2. Forest monitoring systems – research on process-dynamics 3. Stakeholder analysis of land use relevant regional actors
12.15 – 13.30	Lunch
13.30 – 15.00	4. Socio-economic situation of local population within and outside of the protected area 5. Protected area management and strategies
15.00 – 15.30	Coffee break
15.30 – 16:00	Summing up – what have we learnt about the forest and its surroundings but also what have we learnt about each other – new insight into customs, traditions, habits, and way of thinking…,discussions... Christoph Nowicki (leader) Slawomir Bakier (leader)
16.00 - 19.00	Free time
19.00	Celebratory dinner / Summer Academy get-together/Polish-Belarusian-German Friendship evening

Day 10	
All participants	
6.00	Breakfast
9.00 – 11.00	Departure of the participants

Appendix 1: Course schedule

Summer Academy in Belarus 2014

Summer Academy

Conservation of World Heritage in Belarus
Problems of Conservation of Old-growth Forests

31.08.-09.09.2014
Belovezhskaya Pushcha National Park
Republic of Belarus

Course schedule

Day 1 31.08.2014	
	Arrival of the participants Hotel check-in
20.00-21.30	Dinner Informal get-together

Day 2 01.09.2014	
8.00-9.00	Breakfast
9.00-9.40	*Conference hall of Belovezhskaya Pushcha National Park* Official opening of Summer Academy-2014 Alexander Bury – Director-General, Belovezhskaya Pushcha National Park Oleg Dormeshkin – Vice-Rector for Research, Sergey Kasperovich – Vice-Rector for Academic Affairs, Belarusian State Technological University Christoph Nowicki – Responsible Project Coordinator, Eberswalde University for Sustainable Development
9.40-11.00	Presentation of Belovezhskaya Pushcha NP – Vassili Arnolbik, Deputy Director-General for Research Presentations of partner universities: Poland – Slawomir Bakier, Dean of Forestry Faculty, Bialystok University of Technology Germany – Christoph Nowicki, Eberswalde University for Sustainable Development Belarus – Olga Rogova, Head of International Relations Office, Belarusian State Technological University
11.00-11.20	The role of Belovezhskaya Pushcha NP in biodiversity conservation – Vassili Arnolbik, Deputy Director-General for Research
Coffee break	

11.30-12.30	Nature protection in Poland – a representative from Forestry Faculty, Bialystok University of Technology Nature protection in Germany – Christoph Nowicki, Eberswalde University for Sustainable Development Nature protection in Belarus – a representative from Brest Regional Committee under the Ministry of Natural Resources
12.30-13.30	Forestry of the Republic of Belarus: current trends – a representative of the Ministry of Forestry of the RB
13.30-14.30	Lunch
15.00-16.00	Ecological and geographical characteristics of Belovezhskaya Pushcha NP and their effect on its biodiversity – Andrey Bubenko, BP NP
Coffee break	
16.10-17.30	History of BP NP – a visit to the museum (to be guided by a BP representative)
	Mammals of Belovezhskaya Pushcha – in the museum (to be guided by a BP representative)
	Birds of Belovezhskaya Pushcha – in the museum (to be guided by a BP representative)
	Amphibian and reptiles of Belovezhskaya Pushcha – presentation (to be given by a BP representative)
	Insects of Belovezhskaya Pushcha– presentation (to be given by a BP representative)
17.30-18.00	Socioeconomic situation in the areas within and outside Belovezhskaya Pushcha National Park - a representative from Kamenyuki District Executive Committee
18.00-19.00	Introduction to Summer Academy-2014 – Christoph Nowicki Course programme – Oleg Bakhur, Vassili Arnolbik Splitting into thematic groups – Christoph Nowicki, Oleg Bakhur, Vassili Arnolbik and all participants
19.00	Meeting of the participants at the Wildlife Museum
19.15-24.00	Dinner (bonfire) in the recreational area of NP

Day 3 02.09.2014	
8.00-9.00	Breakfast
9.30	Meeting of the participants at the Wildlife Museum
9.45-10.45	History of restoration of the European bison population (a short lecture) – Aleksey Bunevich, BP NP
11.00-13.00	Visit to the open-air cages area – Aleksey Bunevich, BP NP
13.00-14.00	Lunch
14.30	Meeting of the participants at the Wildlife Museum
14.45-18.00	Cultural programme – visit to historical and cultural sites (Brest Hero-Fortress, Kamenets Tower) – Liudmila Grechanik
19.00	Dinner
20.30-	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods

Day 4 03.09.2014	
7.30-8.30	Breakfast
9.00	Meeting of the participants at the Wildlife Museum
9.00-13.00	Structure of Belovezhskaya Pushcha National Park (zones, economic activity), introduction to biological diversity of the southern part of NP (a tour) – Dmitry Bernatski, Anton Kuzmitski, BP NP
13.00-14.00	Lunch (Khvoiniki forestry station)
14.30-18.30	Introduction to biological diversity of the northern part of NP(a tour) – Dmitry Bernatski, Anton Kuzmitski, BP NP
19.00	Dinner
20.30-	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods

Day 5 04.09.2014	
8.00-9.00	Breakfast
9.15-10.15	Plan of work (discussion in groups)
10.15-13.00	Group work
13.00-14.00	Lunch
14.00-18.00	Group work
19.00	Dinner
20.30-	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods

Day 6 05.09.2014	
7.00-8.00	Breakfast
8.30	Meeting of the participants at the Wildlife Museum
8.30-17.00	Visit to the NP affiliation (Vygonovskoye hunt forestry) – Oleg Bakhur, Vladimir Zagorovski Lunch (Vygonovskoye hunt forestry) Coming back to Kamenyuki at 19.30
20.00	Dinner
21.00-	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods

Day 7 06.09.2014	
8.00-9.00	Breakfast
9.15-10.15	Plan of work (discussion in groups)
10.15-13.00	Group work
13.00-14.00	Lunch
14.00-18.00	Group work
19.00	Dinner
20.30-	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods

Day 8 07.09.2014	
8.00-9.00	Breakfast
9.15-10.15	Plan of work (discussion in groups)
10.15-13.00	Group work
13.00-14.00	Lunch
14.00-18.00	Group work (preparing presentations)
19.00	Dinner
20.30-	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods

Day 9 08.09.2014	
8.00-9.00	Breakfast
Conference hall of Belovezhskaya Pushcha National Park	
9.15-9.30	Welcome to the “Summer Academy-2014 Student Symposium” Oleg Dormeshkin – Vice-Rector for Research, Sergey Kasperovich – Vice-Rector for Academic Affairs, Belarusian State Technological University Christoph Nowicki – Responsible Project Coordinator, Eberswalde University for Sustainable Development
9.30-12.00	Presentations by thematic groups: 1. Ecology of flora and fauna in old-growth (sustainable) forest ecosystems Tutors: Vassili Yarmolovich, Andrey Bubenko 2. Forest monitoring systems – research on process-dynamics Tutors: Sergey Minkevich, Dmitry Bernatski 3. Stakeholder analysis of land use relevant regional actors Tutors: Martin Welp, Oleg Bakhur, Tamara Olikevich
12.30-13.30	Lunch
14.00-15.30	Presentations by thematic groups: 4. Socio-economic situation of local population within and outside of the protected area Tutors: Christoph Nowicki, Andrey Lednitski, Vyacheslav Kravchuk 5. Protected area management and strategies Tutors: Christoph Nowicki, Vassili Arnolbik
15.30-16.30	Discussion of the results. Summing up. Discussion of future cooperation
16.30-19.00	Free time
19.00-22.00	Dinner / Summer Academy get-together / Polish-Belarusian-German Friendship evening

Day 10 09.09.2014	
7.00-8.00	Breakfast
8.00-11.00	Departure of Summer Academy participants

Appendix 1: Course schedule

Summer Academy in Germany 2015

Summer Academy

Back to the wild?
Restoring wilderness in riparian forest ecosystems

30.08.-08.09.2015
Lower Oder Valley National Park
Germany

Course schedule

Day 1 Sunday, 30.08.2015 *Venue: "Wildnisschule Teerofenbrücke"*	
14.00 – 18.00	Arrival and registration of the participants
19.00	Dinner

Day 2 Monday, 31.08.2015 *All participants, Venue: National Park Headquarters, Criewen*	
08.15 – 09.00	Breakfast
09.15 – 09.45	Transport to Criewen, National Park Headquarters
10.00 – 10.45	Welcome to the Summer Academy in the Lower Oder Valley National Park • Dirk Treichel – Director of Lower Oder Valley National Park • Dietmar Schulze – Head of the district authority (Uckermark, Federal State of Brandenburg) • Corinna Fittkow – Ministry of Rural Development, Environment and Agriculture of the Federal State of Brandenburg (Department for National Natural Landscapes & Promotion of Nature Conservation) • Karsten Stornowski – Chairman of the Board of trustees of the Lower Oder Valley National Park, Managing Director of the Water and Soil Association • Susanne Pätzold – Managing Director of the Tourism Association of the Lower Oder Valley National Park • Wilhlem-Günther Vahrson – President of Eberswalde University for Sustainable Development (Germany) • Ewa Zapora - Vice-Dean for Research, Faculty of Forestry, Bialystok University of Technology (Poland) • Oleg Bakhur – Head of the Department of Tourism and Nature Management, Belarusian State Technological University (Belarus)

10.45 – 11.45	Lower Oder Valley National Park: history, development and challenges – Dirk Treichel, Director of National Park
11.45 – 12.45	• Introduction to the West-Pomerania Landscape Parks, Karolina Bloom (Park administration, West-Pomerania Landscape Parks) • An overview of nature conservation and protected area systems in Poland Karolina Bloom
12.45 – 13.45	Lunch at „Linde Restaurant“
13.45 – 14.30	• Introduction the Summer Academy – Christoph Nowicki, Eberswalde University for Sustainable Development • Presentation of groups: contents, methods and tutors 1. Ecology of flora and fauna in functional riparian ecosystems *Oliver Brauner & Thomas Kolling, Katrin Todt (LOVNP)* 2. Ecosystem monitoring – research on process dynamics *Jana Chmieleski (EUSD)* 3. Stakeholder analysis of land use relevant regional actors *Martin Welp (EUSD) & Edgar Wendt et al. (Naturwacht)* 4. Socio-economic situation and attitude of local population towards the National Park in the surroundings of the protected area *Siegmund Missall, Martin Welp (EUSD) & Michael Vogt (LOVNP)* 5. Protected area management and strategies *Christoph Nowicki (EUSD), Heike Flemming (LOVNP) & Dirk Treichel (LOVNP)*
14.30 – 18.30	• Guided visit to the visitor centre of the Lower Oder Valley National Park (Michael Vogt) • Excursion to the National Park (Michael Vogt)
18.30 – 19.00	Transport to “Wildnisschule Teerofenbrücke”
19.30 – 24.00	Bonfire & BBQ

Day 3 Tuesday, 01.09.2015 *All participants, Venue: "Eberswalde University for Sustainable Development"* *Wilhelm-Pfeil-Auditorium (H4)*	
08.00 – 08.45	Breakfast
09.00 – 10.00	Transport to Eberswalde University for Sustainable Development
10.15 – 10.45	• Welcoming speech on behalf of the City of Eberswalde – Bellay Gatzlaff, Vice-Mayor • Welcome at and presentation of Eberswalde University for Sustainable Development – Wilhlem-Günther Vahrson, President • Welcome at the Faculty of Forest and Environment – Wolf-Henning von der Wense, Vice-Dean
10.45 – 11.45	Presentation of partner Universities • Bialystok University of Technology – Ewa Zapora, Vice-Dean for Research, Faculty of Forestry (Poland) • Belarusian State Technological University – Olga Rogova, Head of International Relations (Belarus)
11.45 – 12.00	Tee/Coffee break
12.00 – 13.00	An overview of nature conservation and protected area systems at national scale • Belarus – Member of Belarusian delegation (tbc) • Germany – Christoph Nowicki, Eberswalde University for Sustainable Development
13.00 – 14.00	Lunch at the HNEE-Mensa (Forest Campus)
14.00 – 15.45	Setting up a baseline: ecosystems & people I • Importance of the Lower Oder Valley National Park for bird conservation – Jochen Bellebaum • Ecological monitoring concept for the Lower Oder Valley National Park – Jana Chmieleski (EUSD) • Ecology and tree composition of riparian forests in Brandenburg – Andreas Bolte (Thünen Institut)
15.45 – 16.15	Tee/Coffee break

16.15 – 18.00	Setting up a baseline: ecosystems & people II • Socio-economic monitoring for the development of sustainable tourism for Lower Oder Valley National Park – Hartmut Rein (EUSD) • History and rural development of the surroundings of the Lower Oder Valley National Park – Beate Blahy (Schorfheide-Chorin Biosphere Reserve) • Close to nature silviculture in Brandenburg – an appropriate concept for nature conservation in forests? – Peter Spathelf (EUSD)
18.00 – 19.30	Transport to “Wildnisschule Teerofenbrücke”
19.30 – 20.30	Dinner
20.30	After dinner brainstorming (in groups) – elaboration of survey and interview questions, preparation of group work tasks (accompanied by the tutors)

Day 4 Wednesday, 02.09.2015 *All participants*	
08.00 – 08.45	Breakfast
09.00 – 14.00	Canoeing excursion in the region of the National Park as well as West-Pomerania Landscape Parks (Dirk Treichel und Michael Vogt)
14.00 – 15.00	Lunch (packages from wilderness school)
15:00 – 19.00	Bicycle excursion to the Lower Oder Valley National Park (Heike Flemming)
19.30	Dinner (wilderness school)
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors)

Day 5 Thursday, 03.09.2015	
08.00 – 08.45	Breakfast
09.00 – 10.00	Meeting of the thematic groups and their tutors, plan of work, tasks within groups
10.00 – 19.00	Working in the groups (lunch packages from wilderness school) 1. Ecology of flora and fauna in functional riparian ecosystems 2. Ecosystem monitoring – research on process dynamics 3. Stakeholder analysis of land use relevant regional actors (*starts at 8.30 am*) 4. Socio-economic situation and attitude of local population towards the National Park in the surroundings of the protected area 5. Protected area management and strategies
19.00	Dinner (wilderness school)
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors)

Day 6 Friday, 04.09.2015	
08.00 – 08.45	Breakfast
09.00 – 19.00	Working in the groups (lunch packages from wilderness school) 1. Ecology of flora and fauna in functional riparian ecosystems 2. Ecosystem monitoring – research on process dynamics 3. Stakeholder analysis of land use relevant regional actors (*starts at 8.45 am*) 4. Socio-economic situation and attitude of local population towards the National Park in the surroundings of the protected area 5. Protected area management and strategies
19.30	Dinner
20.30	After dinner brainstorming (in groups) – findings of the day, discussion of relevant aspects for the specific group work, adjustment or extension of the guiding questions if needed, analysis of appropriateness of applied methods (accompanied by the tutors)

Day 7 Saturday, 05.09.2015	
08.30 – 09.30	Breakfast (and take a way lunch packages)
09.30 – 21.00	Excursion to Berlin (guided by Axel Zutz) – dinner to be self-organized by the participants in Berlin

Day 8 Sunday, 06.09.2015 *All participants* *Venue: National Park Headquarters, Criewen / Wilderness school, Teerofenbrücke*	
08.00 – 08.45	Breakfast
09.00 – 13.00	Working in the groups (preparing presentations)
13.00 – 14.00	Lunch (lunch packages)
14.00 – 19.00	Working in the groups (preparing presentations, accompanied by the tutors)
19.00 – 20.00	Dinner (at wilderness school)
20.30 – …	After dinner coaching (in groups) accompanied by the tutors

Day 9 Monday, 07.09.2015 *All participants, Venue: National Park Headquarters, Criewen*	
08.00 – 08.45	Breakfast
08.45 – 09.15	Transport to Criewen, National Park Headquarters
09.30 – 10.00	Tee/Coffee reception
10.00 – 10.15	Welcome to the “Summer Academy Student Symposium” (*National Park staff and invited guests from stakeholders, local people, municipalities etc.*) • Jürgen Polzehl (Mayor City of Schwedt) • Dirk Treichel (Lower Oder Valley National Park) • Christoph Nowicki (Eberswalde University for Sustainable Development)
10.15 – 12:45	1. Ecology of flora and fauna in functional riparian ecosystems (20 + ~10min) 2. Ecosystem monitoring – research on process dynamics (20 + ~10min) 3. Stakeholder analysis of land use relevant regional actors (20 + ~10min)
12.45 – 14.00	Lunch
14.00 – 15.30	4. Socio-economic situation and attitude of local population towards the National Park in the surroundings of the protected area (20 + ~10min) 5. Protected area management and strategies (20 + ~10min)
15.30 – 16:15	Summing up and closure of the Trilateral Summer Academy Christoph Nowicki & Dirk Treichel
16.15 – 19.00	Free time
19.00	Polish-Belarusian-German Friendship Dinner – “Linde-Pavillon”

Day 10 Tuesday, 08.09.2015 *All participants*	
08.00 – 09.00	Breakfast
09.00 – 11.00	Departure of the participants

Appendix 2: Selection of student presentations given at the final Summer Academy symposia

Belarus 2014 – Topic 1

Ecology of flora and fauna in functional forest ecosystems

Trilateral Summer Academy - September 2014

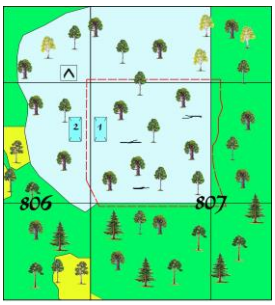
Ecology of flora and fauna in old-growth forest ecosystems

Introduction

- Research of two different sites of old-growth oak forests (0.5 ha).

Protected Area

State Forest



Structure

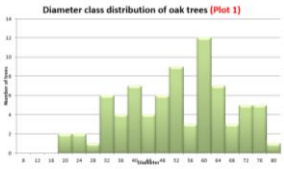
- Methods
- Woodstock
- Fungi
- Vertebrates
- Birds
- Conclusions

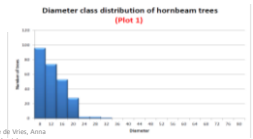
Methods

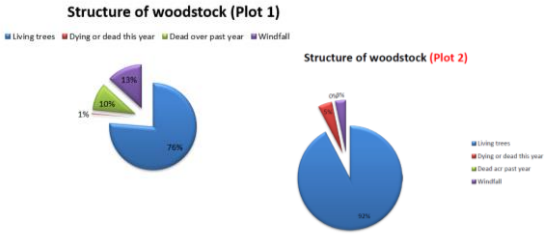
- Measuring of tree heights and diameters
- Measuring of dead wood
- Collecting and analyzing Fungi and Invertebrates
- Looking for bird nests

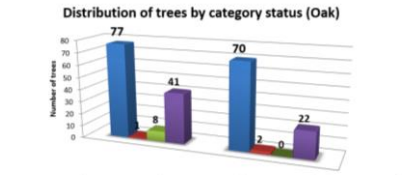
Woodstock

- Ecological viability of living trees
- The role of deadwood to the forest ecosystems
- Total amount of timber





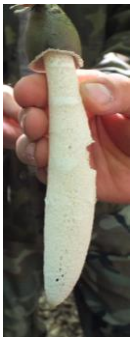




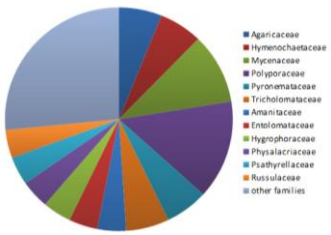
	plot 1	plot 2
Living trees	77	70
Dying dead this year	1	2
Dead over past year	8	0
Windfall wood	41	22

Fungi

- Besides Bacteria the most important destruents in ecosystems
- Indicator for the naturalness of a forest



Variety of Fungi families



The most common species of Fungi

Amanita phalloides

Laetiporus sulphureus

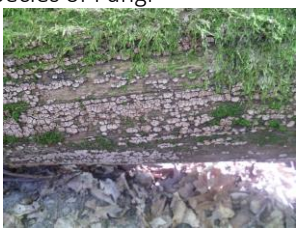
The most common species of Fungi

Hymenochaete rubiginosa

Coprinus spp.

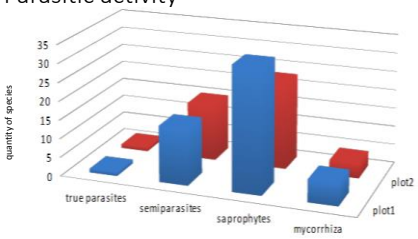
The most common species of Fungi

Fomes fomentarius



Stereum frustulosum

Parasitic activity



Invertebrates

- We found 2 classis :

Arachnida

Plot 1: 7 Individuals

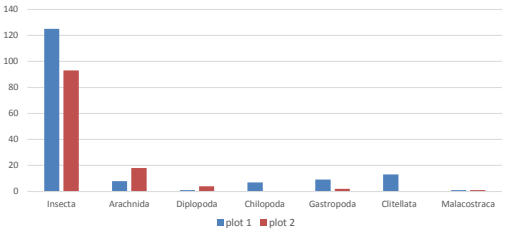
Plot 2: 18 Individuals

Insecta (Coleoptera):

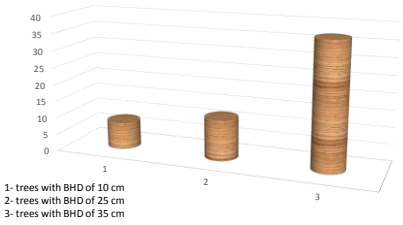
Plot 1: 80 Individuals

Plot 2: 62 Individuals

Collected Invertebrates



Invertebrates in deadwood



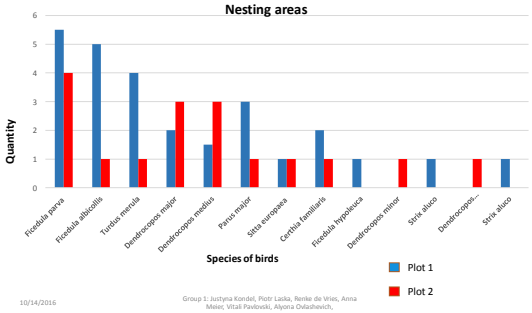
Results

- More predators (among insects) in old-growth oak forests
- The number of insects depends on the deadwood
  → on the total amount
  → on the diameter of trees

Potosia aeruginosa

Birds

- Many birds need old trees with special strucutures for breeding and deadwood with insects for food supply



Dendrocopos minor

Glaucidium passerinum

Ficedula albicollis

Conclusions

- A diverse forest is sustainable because it has a lot of organisms which make the forest more adaptive to pests and other stress factors
- Dead wood is the base of biodiversity in old growth forests
- It is necessary to leave more dead wood in forests to guarantee a sustainable management over a longer time
- The diversity of birds and invertebrates of an unmanaged forest is also influencing the managed forest nearby in a positive way

Thank you!

Special thanks to margarita, our great day and night translator

Tutors:
Vasilii Yarmalovich, Andrew Bubenko, Anton Kuzmitsky

10/14/2016 Group 1: Justyna Kondel, Piotr Laska, Renke de Vries, Anna Meier, Vitali Pavlovski, Alyona Ovlashevich,

Appendix 2: Selection of student presentations given at the final Summer Academy symposia

Germany 2015 – Topic 2

Forest monitoring systems – research on process-dynamics

Structure

- Overview LOVNP
- What is environmental monitoring?
- Methods
- Results Soil sampling
- Results Forest Inventory
- Conclusion

1. Introduction: information about LOVNP

http://www.google.by/search?q=lower+oder+valley&source

Brief information:

- The LOVP is a shared German-Polish nature reserve;
- There is an information centre at Criewen;
- The area comprises 165 km^2 : Germany 105 km^2, Poland 60 km^2;
- The LOVP was created in 1995;
- There is a Special Protection Area (SPA) for birds.

Environmental Monitoring

- Goals
  - to provide information about changes to the structure and function of ecosystems;
  - to assess how affected ecosystems change over time;
  - to seek to determine what the best means of prevention or mitigation might be

For what we did it?

- for use in impact assessment, education, environmental protection or management.

Methods

- 14 Plots in Polder 10 and Criewen Polder
  - Soil Sampling: Horizons and pH-Value
  - Forest Inventory: Species, BHD and Height

Results from the soil sampling - 03.09.2015

Class: GLEYE
Typ: GLEYSOL
Subtyp: HUMIC GLEYSOL

Substrat: SAND

Humulus lupulus

Results from the soil sampling - 03.09.2015

Plot P5	Profile depth [cm]	pH-Value
H	13	5
Ah	27	5
Go	56	5,5
Gro	80	6

Results from the soil sampling - 04.09.2015

Class: GLEYE
Typ: GLEYSOL
Subtyp: HUMIC GLEYSOL

Substrat: SAND

Bidens frondosa

Results from the soil sampling - 04.09.2015

Plot A1	Profile depth [cm]	pH-Value
H	10	4,5
Ah	35	5
Gor	80	4,5

Results from the soil sampling - 04.09.2015

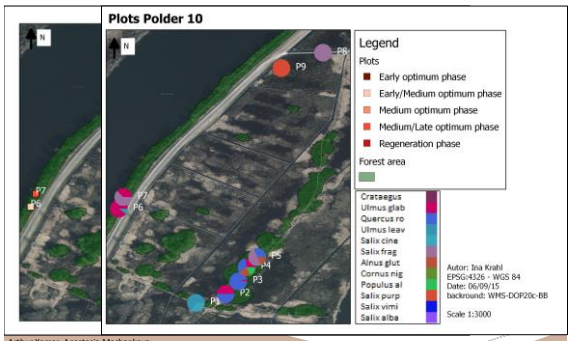
Plot A4	Profile depth [cm]	pH-Value
L	0,5	-
H	9	5
Go	24	5,5
Gro	40	6
Gr	71	5,5

Results: Forest development phases

FDP (forest developement phases)	Canopy Cover	Regeneration cover	amount of deadwood	bhd	bhd_{max}
Gap	< 30%	< 50%	any		
Regeneration phase	< 30%	> 50%	any		
Initial phase	> 30%		any	< 20cm	
Early optimum phase	> 30%		< 30%	> 20 cm	≤ 40 cm
Medium optimum phase	> 30%		< 30%	> 40cm	≤ 60 cm
Late optimum phase	> 30%		< 30%		> 60cm
Terminal phase	> 30%		< 30%		> 60cm
Disintegration phase	> 30%		> 30%	> 20 cm	

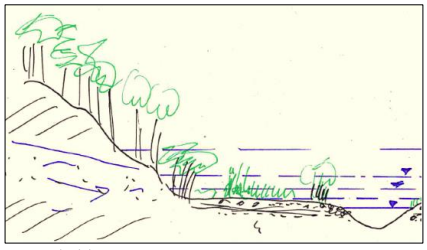
Source: Begehold, Rzanny, Flade, 2014

Plots Polder 10



Plots Criewen Polder

Conclusion



Source: Jana Chmieleski

References

https://en.wikipedia.org/wiki/Lower_Oder_Valley_National_Park

http://www.encyclopedia.com/topic/Environmental_monitoring.aspx

W. Grottenthaler, et. al., 2005, Bodenkundliche Kartieranleitung, 5th Edition, Hannover, P. 83, 105, 242

Begehold, Rzanny, Flade, 2014, Forest Development phases as an integrating tool to describe habitat preferences of breeding birds in lowland beech forests, Journal of Ornithology, Volume 156, Number 1, page 21


Thanks for your attention!

Appendix 2: Selection of student presentations given at the final Summer Academy symposia

Belarus 2014 – Topic 3

Stakeholder analysis of land use relevant regional actors

Stakeholder Analysis of Land Use relevant Regional Actors

Kamenyuki 2014

Group Introduction

Leaders of group:
Martin Welp (HNE, Eberswalde)
Oleg Bakhur (BSTU, Minsk)
Tamara Olikevich (BP, Kamenyuki)

Presentation prepared by:
Anne Schnurpfeil (HNE, Eberswalde)
Ewa Jastrzębska (FFH, Hajnówka)
Inna Kuchinskaya (BSTU, Minsk)
Peter Kriegel (HNE, Eberswalde)
Tomasz Markiewicz (FFH, Hajnówka)
Aleksander Talashko (BSTU, Minsk)

Structure

- ✓Objectives
- ✓Methods
- ✓Who are the stakeholders related to the National Park?
- ✓Results of interviews seperated by topic
- ✓Recommendations and Strategies for Stake Holder Dialogs

Background & Objectives

Stakeholder*:* An individual, group or organisations who are (or might be) affected by a decision or action, or can influence it.

Management plan of the National park (2008) identifies 15 stakeholder groups, including intertnational (e.g. UNESCO), national (e.g. Admistrative Department of the President, National Science Academy), regional (e.g. Brest and Grodno authorities), and local stakeholders.

Our objective was to focus on local stakeholder and to better understand their different views, expectations, and concerns (regarding the NP).

Use of Qualitative Methods

Semi-structured interviews + coding transcribed interviews

List of Stakeholders Interviewed

Stakeholder groups:

- Tourists (7)
- Local authorities (3)
- Retired persons (3)
- Young people (3)
- Teachers (2), librarians (1)
- NGOs (1)
- Owner of farm guest houses (3)

National park workers:

- Foresters/ hunters(2)
- Tourism workers(1)
- Scientists(1)

Total: 27

Forest Management

- Guiding Question
  - What do you think about forest management?

Forest Management

- Findings
  - People highly value the possibility to obtain permission to cut wood outside of core zones for low price
  - Stakeholders have different opinions about leaving dead wood in the forest
  - Illegal cuttings are seen as a problem by forest administration (42 reported cases in 2012-2013)

Forest Management

- Conclusions
  - There are few reported conflicts regarding forest management
  - Through providing campaigns and more information to local people about the importance of protected area, there could be a chance to reduce illegal cuttings
  - Organization of meetings with local people to inform them about National Parks policies

Animal Management

Animal Management

- Guiding Questions
  - Hunting culture?
  - Importance of hunting?
  - Problems with damages to private property by wild animals?
  - Problems with illegal hunting?

Animal Management

- Findings
  - Number of local hunters steadily decreasing
  - Hunting tourism is important source of income
  - Wild animals damage private vegetable gardens
    - Different ways to prevent attacks
  - Attacks on domestic animals seldom, attacks on humans none reported
  - Illegal hunting not a problem due to strict punishment

Animal Management

- Conclusions
  - More traditional huts for accommodation for hunters in the forest were recommended to attract more hunting tourists
  - Better education for locals how to behave when meeting wild animals in forest or forest region is advised

Research and Education

Research and Education

- Guiding Questions
  - How is the Quality of Education?
  - Is the Belovezhskaya Pushcha National Park an attractive work place for scientists?

Research and Education

- Findings
  - Good Quality of Education with Possibility of University Access
  - Environmental Education
    - School offers wide range of ecologically related activities and classes
    - Educational track outside School disappeared

Research and Education

"Program provides events to clean the street, river, the forest and we have a special week of ecology and biology."

(Alexander – Teacher)

Research and Education

- Findings
  - Decreasing number of Scientist working in the National Park
  - Networks (Schools – National Park – Scientists – Library – Local People)
  - Financial support of scientific research at NP by European Bank for Reconstruction and Development

Research and Education

- Conclusions
  - Improvement of Working and Living Conditions of Scientists advised
  - Reconstruction of Educational Track outside School to have Environmental Education for all ages

Tourism

Tourism

- Guiding Questions
  - How long does a tourist stay ?
  - What do tourists think about service?
  - How is the access to the National Park?
  - Are there any conflicts between tourists and locals?
  - Why do tourists come to the National Park?
  - How does tourism affect local development?

Tourism

- Findings
  - Support locals starting own business
  - Development of local tourism = development of village
  - Main income comes from accommodation
  - Hunting tours are profitable
  - Greatest attraction is Grandfather Frost
  - Further service development is suggested

Tourism

- Findings
  - Friendly Relationships with tourists
  - Most tourists come from Belarus and Russia, some from France and Italy
  - There is demand for ecological tours
  - Popular tourist activities are bicycle tours, fishing, swimming
  - Average time of tourist staying = one week
  - Weekend trips = popular

Tourism

- Conclusions
  - More trips with ecological focus
  - Provide training for scientists that are asked to guide tours
  - Use and train additional ecological guides among locals
  - Put up more signs that show way to the National Park

Conditions for Private Businesses

- Guiding Question
  - What are the rules for establishing a bussiness?

Conditions for Private Businesses

- Findings
  - Government policies to encourage private businesses (e.g. lower taxes, credits with low interest rate) are highly valued
  - The conditions to start and run business in National Park are seen as favourable
  - However, some stakeholders think that hotels, cafes, etc. (which are now run by the National Park) should be run by private owners

Conditions for Private Businesses

- Conclusions:
  - Only a few restrictions about running private businesses around the National Park area are present.
  - There are no possibilities to run any private restaurants or hotels within the National Park, but it is possible to open souvenirs shop.

Recommendations and Strategies for Stake Holder Dialogs

- Annual meetings of stake holder groups and management of National Park
- Improvement of information politics to inform local people about management plans
- Performing regular surveys – questionnaires / interviews

Special Thanks

- DBU (Deutsche Bundesstiftung Umwelt)
- Belovezhskaya Pushcha National Park
- Our tutors Martin Welp and Oleg Bakhur
- Tamara Olikevich

Thank you for your attention! Questions?

Appendix 2: Selection of student presentations given at the final Summer Academy symposia

Poland 2013 – Topic 4

Socio-economic situation of local population within and outside of the protected area

Socio-economic situation

of local population within and outside of the protected area of the Bialowieża National Park

Trilateral Summer Academy - September 2013

Bialowieski Park Narodowy, Poland

HNE Eberswalde

Olaf Girke, Nathalie Richter, Laura Banasik, Izabela Kulikowska, Pavel Liger, Maxim Sheremetov

THANK YOU!

sponsored by

DBU Deutsche Bundesstiftung Umwelt

FUNDACJA WSPÓŁPRACY POLSKO-NIEMIECKIEJ
STIFTUNG FÜR DEUTSCH-POLNISCHE ZUSAMMENARBEIT

Nationalpark Unteres Odertal

1.Why? 2. Methods 3. Results 4. Solution!?

There are people living in the territory of almost every National Park.

Public involvement and support for the conservation is essantial

for the long-term sustainability of the various protected areas.
Rural poverty heightens the need for access to natural resources and increases public conflict with management of protected-areas.

The goal of this study was to understand the way of life in this region including the people´s relationship as well as their dependence on the natural resources, while

identifying conflicts and discussing opportunities to increase acceptance of the protected area.

2. Methods

-Data collection techniques-

- Random sampling technique to select households
- Structured Interviews
- Prepared questionaries:
  - multiple choice answers
  - closed and open-ended questions

Study area

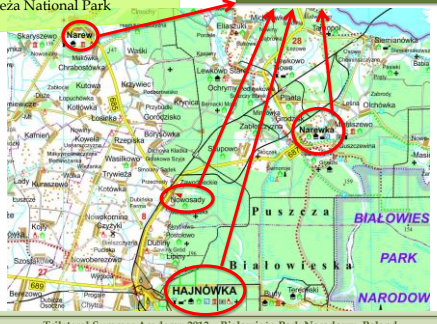
1st day...03.09.2013
Places **within** the Bialowieża National Park

Respondents

22 Women: 16 Men: 6

2nd day...07.09.2013
Places **outside** the Bialowieża National Park

24 Women: 13 Men: 11



- Data analysis techniques -

Quantitative data

- Using statistic techniques (frequencies and percentages)

Qualitative data

- Finding main problems suggested by the respondents (frequencies)

Why?

For the long-term sustainability of different protected areas

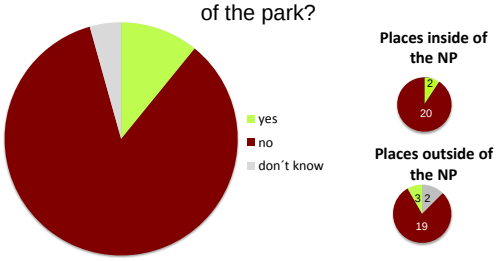
public involvement and support for the conservation is essantial.

Rural poverty strenghtens the need for access to natural resources

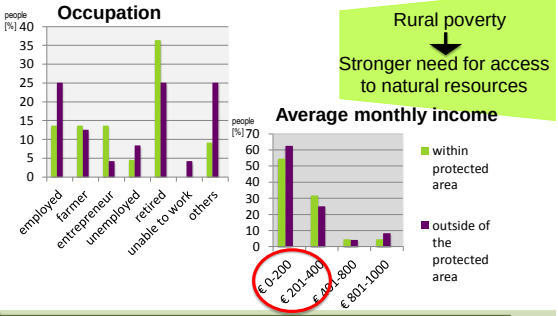
and increases public conflict with protected-area management.

1.Why? 2. Methods **3. Results** 4 .Solution!?

Should the strictly protected area of the Bialowieża National Park be expanded and cover the whole area of the park?



3.1. Economic situation of local people



Rural poverty

↓

Stronger need for access to natural resources

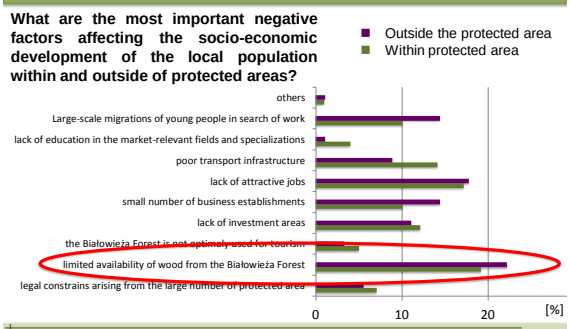
Rural poverty

↓

Stronger need for access to natural resources

3.2. Main conflicts

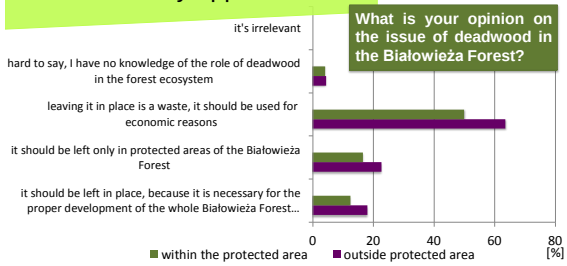
What are the most important negative factors affecting the socio-economic development of the local population within and outside of protected areas?



☑ limited availability of wood from the Białowieża Forest

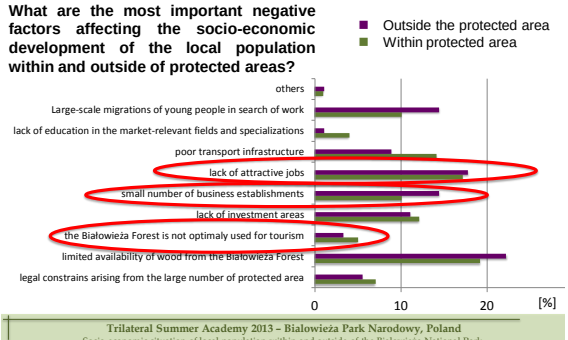
- expensive fuelwood
- less economy opportunities

What is your opinion on the issue of deadwood in the Białowieża Forest?



3.2. Main conflicts

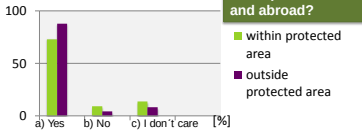
What are the most important negative factors affecting the socio-economic development of the local population within and outside of protected areas?



☑ lack of attractive jobs
☑ small number of business establishments
☑ The Białowieża Forest is not optimaly used for tourism

- no work opportunities, e.g.
  - wood industry
  - tourism (not developed enough)

Would you like that the further development of nature tourism in the Białowieża Forest has become a prestigious showcase of the region and further increased its importance both at home and abroad?



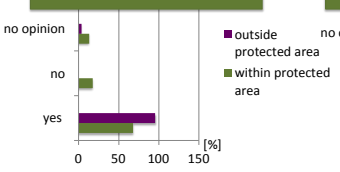
Good job offers BEAUTIFUL fresh air clean water environmental protection NOT MANY IN EUROPE peace and quite sanctuary of nature a lot of plants and animals

Participatory management

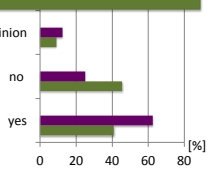
- discussions -

Dialogues!?

Is it worthwile to create conditions for dialogue and cooperation between different groups and communities representing different visions of development of the Białowieża National Park?



Would you like to participate in a discussion about the search for a compromise between environmental protection and economic development needs?



- ~~Fuelwood~~ → solar panels, (gas lines)
- Provide local population with fuel wood
- Further developing of tourism

Appendix 2: Selection of student presentations given at the final Summer Academy symposia

Poland 2013 – Topic 5

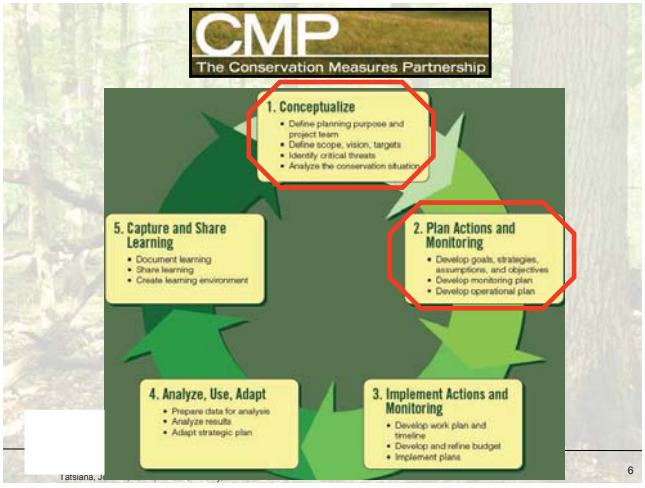
Protected area management and strategies

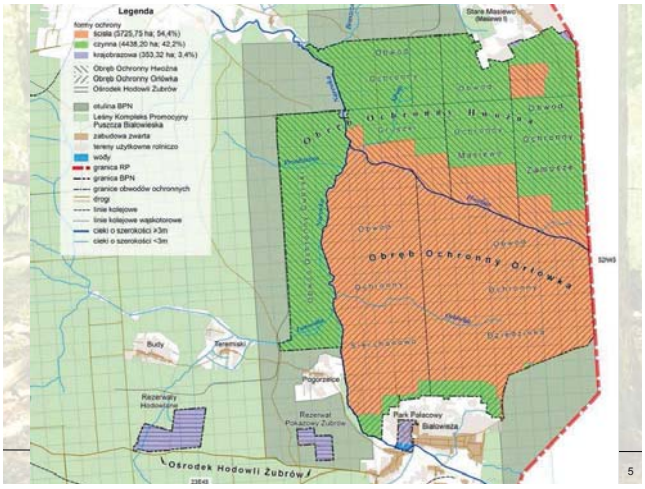
Protected Area Management and Strategies in the BNP (Białowieża National Park)

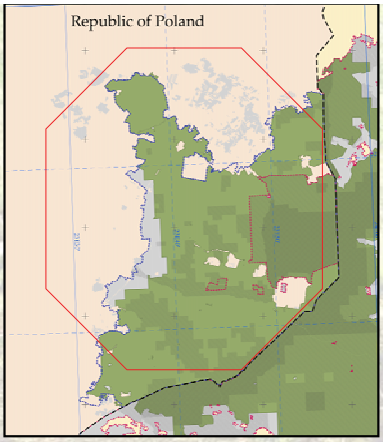
Analysis of management strategies of PA with regard to the selected conservation targets
Identification of major challenges by conducting interviews with the PA administration

Methods

- Visit of conservations sites with BNP staff
- Management Plan & Analysis
- Interviews and Information: local residents, state foresters, BNP staff
- Maps
- Open Standards for the Practice of Conservation







Gathering data about the recent management of the BNP

- Current annual operation plan (ad-hoc management)
- Long term management plan (pending)

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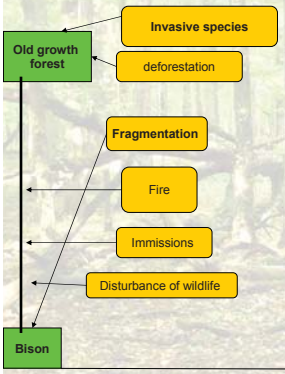
Problems & Conflicts

Conservation Targets | **Direct Threats**



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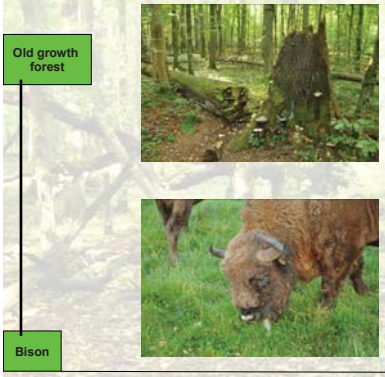
Conservation Targets



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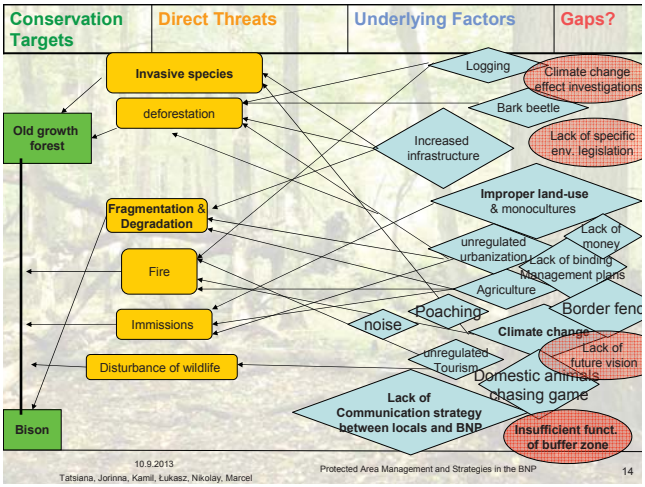
Conservation Targets
Direct Threats
Underlying Factors
Gaps?
Invasive species
deforestation
Old growth forest
Fragmentation & Degradation
Fire
Immissions
Disturbance of wildlife
Bison
Logging
Climate change effect investigations
Bark beetle
Increased infrastructure
Lack of specific env. legislation
Improper land-use & monocultures
unregulated urbanization
Lack of money
Lack of binding Management plans
Agriculture
Poaching
Border fenc
noise
Climate change
unregulated Tourism
Lack of future vision
Domestic animals chasing game
Lack of Communication strategy between locals and BNP
Insufficient funct. of buffer zone
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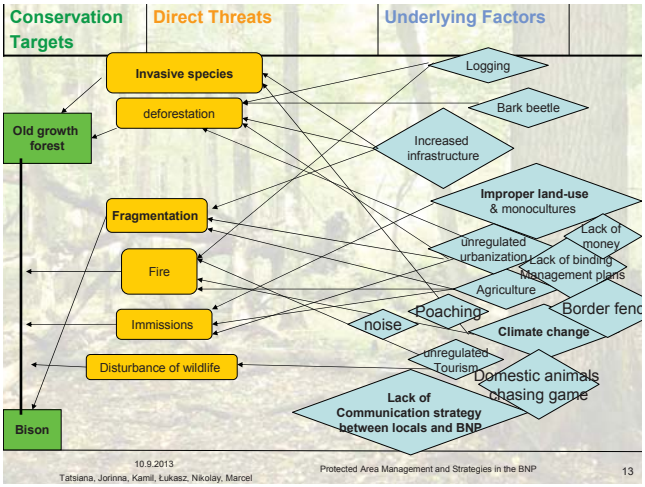
Conservation Targets
Direct Threats
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Invasive species
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Domestic animals chasing game
Lack of Communication strategy between locals and BNP
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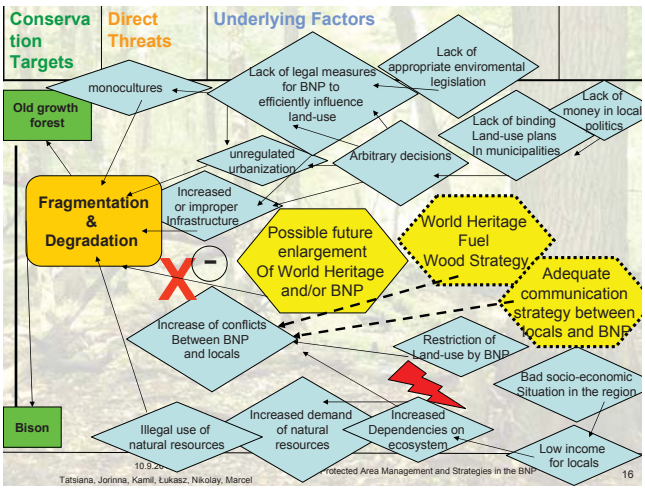
Conservation Targets
Direct Threats
Underlying Factors
monocultures
Old growth forest
Fragmentation & Degradation
Bison
Lack of legal measures for BNP to efficiently influence land-use
Lack of appropriate enviromental legislation
Lack of money in local politics
Lack of binding Land-use plans In municipalities
unregulated urbanization
Arbitrary decisions
Increased or improper Infrastructure
Possible future enlargement Of World Heritage and/or BNP
World Heritage Fuel Wood Strategy
Adequate communication strategy between locals and BNP
Increase of conflicts Between BNP and locals
Restriction of Land-use by BNP
Bad socio-economic Situation in the region
Illegal use of natural resources
Increased demand of natural resources
Increased Dependencies on ecosystem
Low income for locals
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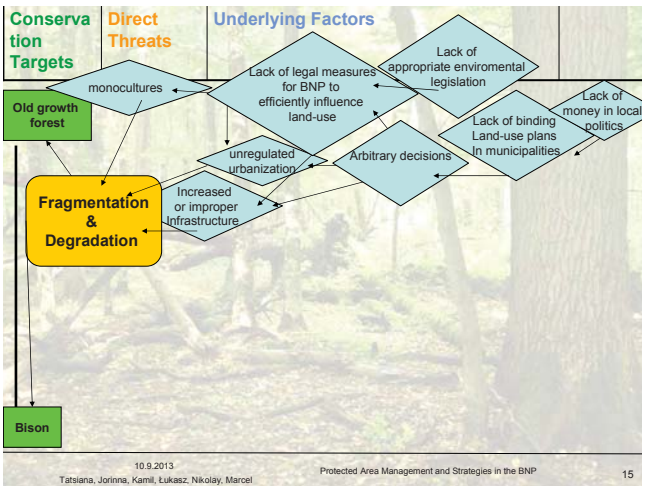
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Strategies & Recommendations

Existing:

- Enlargement strategy: Adaptation to climate change
- Strenghten bilateral cooperation (BNP, PL & BY)

New Proposals:

- Improved buffer zone management
- Communication strategies→Participation of stakeholders
- « World Heritage Fuel Wood Strategy »
- Ad-hoc management →proactive strategies, creating a long term vision
- Eco-Tourism strategy: locals benefiting from BNP

Thank you!