

Darwin Initiative for the Survival of Species

Final Report

**Management Planning for Conservation of Fen Mire Biodiversity
in Belarus**



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1. Darwin Project Information

Project title	Management Planning for Conservation of Fen Mire Biodiversity in Belarus
Country	Belarus
Contractor	Royal Society for the Protection of Birds
Project Reference No.	N/A
Grant Value	£136,382.40
Starting/Finishing dates	April 1, 1999 – May 31, 2002

2. Project Background/Rationale

Mesotrophic fen mires form a unique ecosystem with a range that is now almost exclusively restricted to Belarus, Poland, Ukraine and Russia. Once widespread across temperate Europe, mesotrophic fen mires and their wildlife have declined greatly in extent during this century. The small area that remains is under continuing threat from drainage, land reclamation, peat extraction, development and vegetation succession as a direct result of land use and water level changes. Intact mires accumulate organic matter and store large amounts of carbon in the saturated substrate. They are vital habitats for globally threatened species, such as aquatic warbler and corncrake, as well as a range of other species of conservation concern. Approximately 50% of the world population of aquatic warbler is found in the three mires in Belarus addressed by this proposal.

From 1995 to 1998, several joint Belarusian/German expeditions assessed the situation of the mesotrophic fen mires and the distribution of several bird species, in particular the aquatic warbler. Because of these surveys, there is now a very good overview of the world population of aquatic warbler, and certainty that Belarus is home to the most significant remaining population of this globally threatened species.

In 1997, an International Conference on the Ecology and Conservation of Floodplains and Lowland Mires in the Polesie Region was organised by the National Academy of Sciences in Belarus and the Ministry for Natural Resources and Environmental Protection. The Michael Otto Foundation funded the Conference. Many elements of this project were listed as priorities within the conference action plan – for example, development of management plans for Dikoe, Sporova and Zvanets mires and studies of aquatic warbler ecology.

In March 1998, the BirdLife International Aquatic Warbler Conservation Team met in Germany. Key aquatic warbler experts from nine European countries discussed the International Aquatic Warbler Action Plan and highlighted the essential importance of Belarusian mires for the conservation of the aquatic warbler.

In July 1998, the RSPB organised an international participatory project-planning workshop, bringing together scientists, NGOs and local government representatives from Poland and Belarus to explore opportunities for a cross-border mire conservation programme. Subsequently, a project proposal was submitted to the Darwin Initiative.

3. Project Summary

The overall objective of the project was the elaboration of management plans for the conservation of mesotrophic fen mire biodiversity at three key sites in Belarus. The specific aims of the project were to:

1. develop an improved catchment-based understanding of mire hydrology and hydrochemistry to inform the management planning process
2. prepare an ecological profile (zoological and botanical) for the three key mires to inform the management planning process
3. improve the information base about the ecology of a key biodiversity indicator species (aquatic warbler)
4. develop management plans for the three key sites with the support of relevant authorities and stakeholders
5. secure public and political support for the implementation phase.

Throughout the entire course of its implementation, the project never veered away from its original objectives. The operational plan, however, underwent slight changes in order to allow for more effective delivery of the objectives. The project completion date was moved from March 31 to June 30 due to the need to run the final project conference alongside the Second International Conference on the Ecology and Conservation of Floodplains and Lowland Mires in Belarus. The Darwin Secretariat granted approval for this in November 2001.

Appendix 1 lists the Articles of the Convention on Biological Diversity addressed by the project.

Generally, the project can be evaluated as highly satisfactory, considering that all of its objectives have been fully delivered. Though not specifically targeted, social aspects of human development were tackled through improvements to the natural environment that also affected people's lives – e.g. flood-prevention schemes.

Leaving aside the primary beneficiary of the project, which is the entire environment, the project can be said to have significantly improved the attitude of the local community around the project site towards both the initiative and the area they live in. A series of media campaigns (involving posters, stickers, TV and radio programmes, and newspaper articles published in the wake of project press releases – some of which are presented in the attachment) have significantly raised public environmental awareness. The local people now appreciate all the work that is being done, as they have realised the value of the surrounding wetlands, having reversed their attitude from “it's a useless piece of wet land that harbours hoards of mosquitoes” to “the area is unique in terms of biodiversity and habitats and needs to be preserved in its natural state for future generations”.

4. Scientific, Training and Technical Assessment

The project focused on research into two broad aspects of mire function: hydrology and biology.

The study and evaluation of the mire water regime at the three mires (Sporovo, Dikoe and Zvanets) involved both fieldwork and desk study. Measures of discharge and water level were made regularly throughout the field season at each site. Samples of water in typical cross-sections of the three mires were collected. Measurement of the ground water level and ground water sampling were also conducted. The data collected on the field trips were analysed in the laboratory using desk study and appropriate statistical instruments. Additionally, analysis of the data available from different scientific institutes (Belgiprovodkhoz, Belgidromet) was done, which allowed compilation of a full set of data on annual discharge in typical cross-sections, as well as average flow rate, water level, duration of flooding and other key hydrological indicators for the three mires. The work was conducted with the support of local nature protection administrations and representatives of local companies conducting economic activities that influence the water regime and quality at the sites. Project hydrologists used information provided by local people in their studies. The data gained were used to set up a hydrological database for the project (Annex 1 in hard copy of report).

As part of the above work, the Chief Project Hydrologist, Dr Shevtsov, visited the RSPB between November 27 and December 5 1999 to learn from the experience of RSPB experts in computer modelling. In turn, RSPB Chief Hydrology Expert Dr Paul Jose traveled to Belarus to visit the three project sites to assist with the establishment of survey and monitoring routines.

The ecological profile included the study of botanical, zoological and ornithological data relevant to each site. The study provided a general description of each area's habitats, focusing on meadow, mire and forest vegetation. All plant species encountered in the project sites were recorded, including Red Data species. Similar descriptions were provided for all animal species. Particular emphasis was placed on the status of the mire indicator species – the aquatic warbler. The aquatic warbler research included both desk studies and field surveys. Aquatic warbler habitat requirements were studied on monitoring plots of 40–120 ha in all three mires, together with feeding ecology (372 ligature samples), breeding ecology (97 nests monitored), movements (448 birds ringed, 92 of which had individual marks). The density of singing males was recorded on permanent monitoring plots throughout the project, with all birds counted and mapped. The species composition and abundance of prey items of aquatic warblers were also determined. Full details of the census techniques used can be found in Kozulin and Flade (1999). More detailed descriptions of the methods and findings are presented in the three

management plans. The findings have also been presented in 17 articles published in peer-reviewed journals.

The project has provided the following training opportunities.

1. **Training in ecological techniques in the UK.** One Belarusian entomologist (Mr Viktor Gurin) received 2 weeks of training in the UK on the identification of aquatic warbler food by faecal analysis. The Coordination Group decided to replace a planned second visit by an entomologist with a visit by a specialist in aquatic warbler ecological data processing (Ms Lyubov Vergeichik), who studied statistical modeling; database management; the Mayfield method of estimating nesting success; the calculation and analysis of differences in nest success among mires and according to date and brood; and the analysis of partial losses of eggs and nestlings, nestling growth, feeding of nestlings and niche overlap between species.
2. **Training in ecological techniques in Belarus.** Nine Belarusian undergraduates (Ms Lyubov Kozulina, Ms Elena Zanimon, Mr Oleg Bykov, Mr Alexander Tchaikovsky, Ms Svetlana Maleyonok, Ms Elana Babushnikova, Ms Veronika Protasevich, Ms Irina Vershitskaya, Ms Irina Bernekovich) received a total of 3 weeks' training in ecological methods (aquatic warbler density estimation, nest mapping, ringing and nestling diet analysis; pitfall trapping, sweep netting, invertebrate transects and Malaise traps; the transect method of geobotanical description of habitat, and the geobotanical method for describing nest sites. Four Belarusian postgraduates received 2 weeks' training in ecological methods (Ms Oksana Ignatyuk – monitoring of fen mire vegetation; Mr Dmitry Zhuravlev – degradation-induced changes in mire species composition; Ms Rita Minets – fen mire insects; Mr Oleg Ostrovsky – wetland bird species).
3. **Training in management planning.** Twenty Belarusians received three week-long training sessions in management planning during RSPB-led pathfinder seminars on Dikoe, Sporovo and Zvanets. The lists of participants are presented below. The workshop participants are now involved in conservation activities at the project sites.

List of participants in the Sporovo pathfinder seminar

1. Dr. Norbert Schaffer, Head of European Programs, RSPB, UK
2. Mr. Aidan Lonergan, Country Programs Officer, RSPB, UK
3. Dr. Tobias Salathe, Europe Coordinator, Ramsar Bureau, Switzerland
4. Dr. Ceri Evans, Reserves Ecologist, RSPB, UK
5. Ms. Anu Hassinen, United Nations Development Program, UN Office in the Republic of Belarus
6. Ms. Franziska Tanneberger, Student at the University of Greifswald Botanical Institute, Germany
7. Dr. Alexander Kozulin, Head of Scientific Program, APB Scientific Director and Senior Research Fellow at the Institute of Zoology of the National Academy of Sciences
8. Alexander Vinchevski, APB Director
9. Maxim Vergeichik, APB Project Manager
10. Dr. Nikolai Shevtsov, Leading Hydrology Consultant, BELGIPROVODKHOZ Research Institute
11. Professor Nikolai Bambalov, Leading Ecology Consultant, Head of Laboratory at the Institute of Ecology of the National Academy of Sciences

12. Viacheslav Rakovich, Ecology Consultant, Institute of Ecology of the National Academy of Sciences
13. Gennadi Dudko, Land-use Consultant, Scientific Land Use and Exploitation Center
14. Olga Skaskevich, Land-use Consultant, Scientific Land Use and Exploitation Center
15. Arkadi Skuratovich, Botany Consultant, Institute of Botany of the National Academy of Sciences
16. Dr. Jazep Stepanovich, Botany Consultant, Institute of Botany of the National Academy of Sciences
17. Vasily Zinovich, Head of the Berioza District Inspection for Natural Resources
18. Vladimir Kuzmynchuk, Head of the Berioza District Drainage Systems Plant
19. Yuri Bazhenov, Head of the "Selets" Fish Farm
20. Anatoli Gorbachev, Leading Fish Breeding Specialist, the "Selets" Fish Farm
21. Viktor Zdanovich, Head of Land Resources Department, Berioza District Executive Committee
22. Nikolai Kashtelian, Head of the "Zemledelets" Collective Farm
23. Viktor Kononovich, former Head of the Berioza District Inspection for Natural Resources
24. Alexander Guz, Head of the Drogichin District Inspection for Natural Resources
25. Oleg Sidorenko, Ministry of Natural Resources and Environmental Protection of Belarus
26. Nadezhda Grishkova, Ministry of Natural Resources and Environmental Protection of Belarus
27. Boris Sidorovich, Head of Department, BELGIPROVODKHOZ
28. Dr. Mikhail Nikiforov, President of APB and Deputy Head of the Institute of Zoology of the National Academy of Sciences
29. Georgy Kozulko, Deputy Director, National Park Belavezhskaya Pushcha
30. Boris Shokalo, Brest Oblast Committee for Natural Resources and Environmental Protection
31. Ivan Maleitin, Head of the Berioza District Executive Committee
32. Alexei Mikityuk, Ukrainian Society for Bird Protection
33. Sergey Momotyuk, Head the Drogichin District Executive Committee

List of participants in the Dikoe pathfinder seminar

1. Mr. Aidan Lonergan, Country Programs Officer, RSPB, UK
2. Dr. Ceri Evans, Reserves Ecologist, RSPB, UK
3. Dr. Alexander Kozulin, Head of Scientific Program, APB Scientific Director and Senior Research Fellow at the Institute of Zoology of the National Academy of Sciences
4. Alexander Vinchevski, APB Director
5. Maxim Vergeichik, APB Project Manager
6. Dr. Nikolai Shevtsov, Leading Hydrology Consultant, BELGIPROVODKHOZ Research Institute
7. Professor Nikolai Bambalov, Leading Ecology Consultant, Head of Laboratory at the Institute of Ecology of the National Academy of Sciences
8. Viacheslav Rakovich, Ecology Consultant, Institute of Ecology of the National Academy of Sciences
9. Gennadi Dudko, Land-use Consultant, Scientific Land Use and Exploitation Center
10. Olga Skaskevich, Land-use Consultant, Scientific Land Use and Exploitation Center
11. Arkadi Skuratovich, Botany Consultant, Institute of Botany of the National Academy of Sciences
12. Dr. Jazep Stepanovich, Botany Consultant, Institute of Botany of the National Academy of Sciences
13. Vasily Zinovich, Head of the Berioza District Inspection for Natural Resources
14. Alexander Guz, Head of the Drogichin District Inspection for Natural Resources
15. Oleg Sidorenko, Ministry of Natural Resources and Environmental Protection RB

16. Nadezhda Grishkova, Ministry of Natural Resources and Environmental Protection of the Republic of Belarus
17. Georgy Kozulko, Deputy Director, National Park Belavezhskaya Pushcha
18. Boris Shokalo, Brest Oblast Committee for Natural Resources and Environmental Protection
19. Alexey Artyushevsky, Department of Presidential Affairs
20. Tamara Rusak, Head of Land Resources Department, Svisloch District Executive Committee
21. Georgy Rezano, Head of Pruzhany District Inspection for Natural Resources
22. Alexey Shakhnovich, Director of Prushany District Drainage Works Company
23. Nikolai Klimovich, Deputy Director of BrestMelirovodkhoz
24. Dr. Alexander Pugachevsky, Deputy Director of Institute of Experimental Botany of the National Academy of Sciences of Belarus
25. Igor Artyushchik, Forestry Chief, National Park Belavezhskaya Pushcha
26. Evgeny Smoktunovich, Director of National Park Belavezhskaya Pushcha
27. Nikolai Cherkas, APB Board member
28. Alexander Pekach, Chief Forester, National Park Belavezhskaya Pushcha

List of participants in the Zvanets pathfinder seminar

1. Mr. Aidan Lonergan, Country Programs Officer, RSPB, UK
 2. Dr. Ceri Evans, Reserves Ecologist, RSPB, UK
 3. Dr. Alexander Kozulin, Head of Scientific Program, APB Scientific Director and Senior Research Fellow at the Institute of Zoology of the National Academy of Sciences
 4. Dmitry Goloubovsky, APB Project Manager
 5. Dr. Nikolai Shevtsov, Leading Hydrology Consultant, BELGIPROVODKHOZ Research Institute
 6. Professor Nikolai Bambalov, Leading Ecology Consultant, Head of Laboratory at the Institute of Ecology of the National Academy of Sciences
 7. Viacheslav Rakovich, Ecology Consultant, Institute of Ecology of the National Academy of Sciences
 8. Gennadi Dudko, Land-use Consultant, Scientific Land Use and Exploitation Center
 9. Arkadi Skuratovich, Botany Consultant, Institute of Botany of the National Academy of Sciences
 10. Dr. Jazep Stepanovich, Botany Consultant, Institute of Botany of the National Academy of Sciences
 11. Alexander Guz, Head of the Drogichin District Inspection for Natural Resources
 12. Vitaly Korenchuk, Chief Expert of the Reserves Department, Ministry of Natural Resources and Environmental Protection of Belarus
 13. Boris Shokalo, Brest Oblast Committee for Natural Resources and Environmental Protection
 14. Nikolai Cherkas, APB Board member
 15. Oleg Knurenko, Head of Hydrotechnical Department, DneproBugVodput
 16. Mikhail Maximenkov, Entomologist, Institute of Zoology of the National Academy of Sciences of Belarus
 17. Vyacheslav Olekhovich, Chief Engineer of Prushany District Drainage Works Company
 18. Ivan Pavlyukovets, Chief Engineer of Kobrin District Drainage Works Company
 19. Alexander Ogievich, Head of Land Resources Department, Kobrin District Executive Committee
- 4. Training in financial management and project management.** The project manager has gained valuable insights into the managerial aspects of project implementation thanks to ongoing capacity-building and several visits to the RSPB.

5. **The following Belarusian postgraduates have obtained MSc qualifications:** Ms Lyubov Kozulina (diploma thesis 'Biology of the aquatic warbler'); Ms Elena Zanimon (diploma thesis 'Structure of invertebrate complexes in the landscape of the zakazniks Zvanets and Dikoe'); Ms Tatiana Simon (diploma thesis 'The genus *Ranunculus* L.a. in the Belarusian flora: taxonomy, geography, ecology and ration use').

5. Project Impacts

The main achievement of the project is the successful preparation of management plans for the Dikoe, Sporovo and Zvanets mires, and their subsequent approval by the Ministry of Environment. The documents will now serve as a basis for further conservation activities at the sites. The implementation stage, which is due to commence shortly, will abide by the recommendations set forth in the management plans, thereby ensuring conservation of the unique biodiversity in the area. The Ministry of Environment has been intensively involved in the project at all stages, and has now committed to contributing both financial and in-kind resources towards implementation of the most urgent prescriptions set out in the plans. A set of management planning guidelines has been prepared and is now being used by the Ministry of Environment. In addition, appropriate amendments to the legislation (clauses that call for preparation of management plans for protected areas) are being considered.

Improved management planning capacity in both APB and the Ministry of Environment can be cited as the most significant training impact. It is important to note that prior to the project, management planning for protected areas had not been applied in Belarus. Building on the transfer of the RSPB's expertise in this area, the project has managed to adopt the management planning process to local needs, preparing (for the first time in Belarus) three comprehensive management plans for nature reserves. The achieved capacity will now be used by APB in implementing other conservation projects. For better conservation of the globally threatened aquatic warbler, the Belarusian government has made the following decisions.

1. The Zvanets zakaznik (protected area) has been expanded to include the entire Zvanets mire.
2. The status of this zakaznik has been raised from 'biological' to 'landscape'.
3. The Dikoe zakaznik will be incorporated in the Belovezhskaya Pushcha National Park.

The data collected during implementation of the project have enabled the Ministry of Environment to have the Zvanets zakaznik designated as a Ramsar site. Specific clauses on the implementation of the three management plans have been included in the National Action Plan on Ramsar Convention.

As indicated above, 13 Belarusian undergraduates have been trained in ecological techniques, which has enabled some of them to successfully incorporate the new knowledge in their studies and diploma research.

The hydrological expertise gained by Dr Shevtsov and his colleagues has been successfully applied in other projects run by APB, such as the restoration of the hydrological regime at the Yelnia bog and the clearance of floating vegetation from the

Yaselda River (both of these projects have been completed and acknowledged by the donors).

For the first time in Belarus, a team of highly skilled experts has been built to efficiently prepare management plans for protected areas. The Ministry of Environment has developed several new projects on management planning which will draw on the expertise of these people – e.g. a Pripyat project and a Ramsar sites project.

The project would not have been possible without the heavy involvement of APB's partner in the UK, the RSPB. The RSPB's management planning experience was effectively transferred and adopted in Belarus. The RSPB Project Coordinator alone has spent over 12 weeks in Belarus working closely with the project staff. At the local level, APB has built and strengthened its partnership with the Ministry of Environment, which has contributed towards better contact-building with the local communities at the project sites. Throughout the project, APB has grown to become acknowledged as a reliable and trustworthy partner in the local and international conservation community.

Before the project, many conflicts existed on or around these sites involving conservation organisations, local communities, land and water users (collective farms, fish farms, drainage works companies, etc.). The implementation of the project prescriptions will help eliminate these conflicts.

The Yaselda floodplain mini-project is another example of social impacts. The floodplain section of the Sporovo mire had been suffering from annual floods, which destroyed not only nests of the globally threatened aquatic warbler but also the local community's hayfields. Specific actions were identified by the Sporovo management plan in order to ameliorate the situation. Considering the urgency of the problem for the local environment, immediate actions were taken to locate external funding to implement the prescriptions. The successful completion of the mini-project has helped eliminate the threat of floods, thereby preventing further degradation of the ecosystem and securing the preservation of hay crops grown in the area.

6. Project Outputs

All project outputs are quantified in Appendix II.

As can be seen from the table, most of the outputs have been delivered exactly as planned. At the same time, the project has managed to generate some additional outputs, such as a sixth permanent monitoring plot established outside the primary project sites in order to study the possibility of aquatic warbler migration between sites. The plots are distributed as follows: Dikoe – 1, Zvanets – 1, Sporovo – 3 (Kostyuki, Peshchanka, Kokoritsa), Prostyr (additional area) – 1.

The three management plans have been sent to all relevant stakeholders within Belarus, i.e. the Ministry of Environment, its local branches, local drainage works companies, etc. The management plans have also been sent to the Ramsar Convention Bureau, Bonn Convention Bureau and the Lithuanian Ministry of Environment. The Belarusian Ministry of Environment will be responsible for further dissemination.

7. Project Expenditure

Project expenditure is summarised below.

Darwin Budget Category	PREDICTED BUDGET			GRANT EXPENDITURE					VARIATION
	Original Budget	July 1999 Amendment	March 2000 Amendment	Year 1	Year 2	Year 3	Year 4	TOTAL	
Staff costs									3.72%
Rent, rates, heating, lighting, cleaning									16.31%
Postage, telephone, stationery									10.04%
Travel and subsistence									-2.43%
Printing									-11.65%
Conferences, seminars, etc.									-35.19%
Capital items									0.27%
Others (please specify)									45.33%
<i>Interpretation & Translation</i>									
<i>Aerial photographs / mapping materials</i>									
<i>Photocopying</i>									
<i>Press conferences</i>									
<i>Audit - APB</i>									
<i>RSPB Overhead</i>									
<i>UNDP overhead fee</i>									
<i>Camera film</i>									
<i>Immunisation</i>									
<i>Error Correction</i>									
<i>Other (Misc)</i>									
TOTAL									-0.38%

Explanations for differences between predicted and actual budget of 10% or more

Rent, rates, cleaning, lighting (+16.31%): APB moved to more spacious offices during the course of the project and consequently encountered higher than budgeted rents, rates and office running costs.

Postage, telephone, stationery (+10.04%): Most of this increase is a direct result of the extension of the project end date from March 31 2002 to May 30 2002 and the intense communication leading up to the final conference.

Printing (-11.65%): This underspend is due to the negotiating skills of APB staff who always sought and got the best possible value for money from external suppliers.

Conferences and seminars (-35.19%): This underspend was due to a combination of the identification of other sources of funding for this budget line and the negotiating skills of the APB staff who kept the conference costs to a minimum.

Other (together +45.33%): The biggest increase was in the UNDP's overhead fee for financial administration. It was of course necessary to have this function on-stream up to the end of the project in May/June 2002.

Despite these individual variances, we are happy to report that the entire project came in very slightly under the agreed budget.

8. Project Operation and Partnerships

APB, BirdLife Belarus was the chief local partner in the implementation of the project. As initially planned, the project involved close collaboration with the National Academy of Sciences of Belarus (NASB), the Research Institute for Problems of National Resources Use and Ecology of NASB, the Project Institute for Land Reclamation and Drainage (Belgiprovodkhoz), and the Belarusian Scientific Centre for Applied Land Reclamation. The project has successfully forged strong partnerships with the Ministry of Natural Resources and Environmental Protection of Belarus and its regional and local branches. The local environmental committees of Drogichin and Beryoza districts have been actively involved in the project at all stages of its implementation.

The opinions of all the partners involved in the project were carefully studied and adhered to during the preparation of the management plans. The comments/additions made by all participants in pathfinder seminars were analysed and incorporated in the management plans.

Throughout the entire project, consultations were held with other ongoing projects in Belarus, such as the UNDP-GEF Dniper Basin Programme, the UNDP-GEF Pripyat Project and the TACIS River Basin Management Project, in order to ensure proper coordination of activities, avoid possible overlap and achieve maximum effectiveness of conservation activities in the country.

As well as invaluable input by the RSPB, the project has benefited significantly from the expertise and direct involvement of international conservation organizations such as the Ramsar Convention Bureau (Dr Tobias Salathe participated in consultations on the preparation of management plans) and the Michael Otto Foundation for Environmental Protection (which provided funding for the implementation of the Yaselda clearance project).

On completion of the project, the government plans to set up management offices for the Zvanets and Sporovo zakazniks, which will ensure the continued involvement of local partners and communities. In the Belovezhskaya Pushcha National Park, the local administration keeps track of all activities and the implementation of management recommendations. The six monitoring plots set up during the project are recommended for inclusion into the National Monitoring Network, which will ensure that they continue to be used when the project is over.

9. Monitoring and Evaluation, Lesson-Learning

Zoological and hydrological monitoring was established at the very start of the project. Monitoring of the selected indicators enabled the team to draw up management planning recommendations. The project has collected baseline information that will be used throughout further implementation stages to enable effective assessment. The following indicators were used: density of aquatic warblers, ratio of vegetation communities, changes in habitat ratio, water level changes.

The project underwent an internal evaluation by the Scientific and Technical Board of the Ministry of Environment at the time when the three management plans were being assessed. The plans were approved and adopted by the Board.

The most important lesson learned by the team in the course of the project is that major environmental problems (related to the conservation of biodiversity) stem from a lack of coordination between conservation agencies and those organisations that exploit biodiversity. The second lesson is that management planning is an excellent method for eliminating conflicts between stakeholders. The project has underscored the significance of good contacts with conservation authorities at the national and local level. Economic stability in the country also plays a key role in the successful implementation of conservation projects.

10. Darwin Identity

As planned, the project has promoted the Darwin Initiative logo whenever possible. The Darwin Initiative's contribution was acknowledged in scientific papers, in articles published in the RSPB's *Birds* magazine (readership 1.9 million), in the RSPB's annual report and in all press releases and media interviews related to the project. The Darwin logo was displayed in the offices of APB and other project collaborators. The logo was promoted at all pathfinder workshops and all conferences (including the Second International Conference on the Ecology and Conservation of Floodplains and Lowland Mires in the Polesie Region, May 22–26, 2002).

All PR publications produced by the project team carried either the logo or the name of the Darwin Initiative. As a result, many people in Belarus are familiar with the name and are aware of the activities promoted by the Darwin Initiative in Belarus and its invaluable contribution toward the conservation of the country's nature.

Due to its unique status and its pioneering approach to nature conservation, the project has been seen as a distinct undertaking with a clear identity.

11. Leverage

In the course of the implementation of this project, the following parallel initiatives were carried out.

- The **UNDP Office in Belarus** contributed USD 15,000 toward the project, in particular the Second International Conference on the Ecology and Conservation of Floodplains and Lowland Mires of the Polesie Region.
- **A census of greater and lesser spotted eagles in Belarus.** This 2-year research project, funded by the RSPB (GBP 24,500 over 2000–2002), aimed to analyse the status of the species in Belarus and develop recommendations for their conservation. About 80 pairs of greater spotted eagles have been located in Belarus to date.
- The long-term project **Monitoring of the Belarusian population of the aquatic warbler** is funded by RSPB (GBP 2,000 per year 2002–2005). Population data are collected annually at the seven main breeding sites of the aquatic warbler, a globally threatened species.
- **Bittern ecology in Belarus.** This 3-year research project, funded by the RSPB (GBP 6,590 over 2000–2003), is aimed at studying the species' status in the country and formulating conservation recommendations.
- **Restoration of the natural hydrological regime at the key breeding site of the globally threatened aquatic warbler in Sporovsky zakaznik.** This project, co-funded (USD 24,000) by the Michael Otto Foundation for Environmental Protection and the Ministry of Natural Resources and Environmental Protection of Belarus, has improved the hydrological regime in Sporovsky zakaznik by removing floating vegetation dams from the Yaselda riverbed.
- The project **First Stage of National Wetlands Inventory in the Republic of Belarus** aimed to analyse the system for collecting data on wetlands in Belarus, summarise the available data on the status of all types of wetlands and work out an action plan for a national wetlands inventory. The project was carried out with financial support (EUR 26,723) from the Dutch Ministry of Foreign Affairs (DGIS) under the Conservation and Wise Use of Wetlands Global Programme, managed by Wetlands International.
- The 6-month project **Restoration of the hydrological regime and prevention of fires in the hydrological zakaznik Yelnia, an IBA and potential Ramsar site** was carried out with financial support (EUR 22,500) from the Dutch Ministry of Foreign Affairs (DGIS) under the Global Peatland Initiative, managed by Wetlands International in cooperation with the IUCN–Netherlands Committee, Alterra, the International Mire Conservation Group and the International Peat Society. The project has fully met all of its objectives by effectively closing drainage ditches and canals around the Yelnia bog, thereby preventing excessive outflow of water and ensuring gradual restoration of the natural hydrological regime in the area, as well as minimising the risk of future wildfires.

- The **Central European Peatland Project**, funded by Wetlands International (USD 5,000), aimed to draw up an inventory of all Belarusian mires. The project was implemented by APB in close cooperation with scientific institutions of the National Academy of Sciences of the Republic of Belarus and the Ministry of Natural Resources and Environmental Protection of Belarus.
- **Regulation of burning of vegetation.** This project, co-funded (USD 5,000) by BirdLife International and the Ministry of Natural Resources and Environmental Protection of Belarus, aimed to develop recommendations to control spring burning of vegetation, as well produce advocacy materials (posters and a video) explaining the harm this activity inflicts on the environment.
- **Additional Fundraising.** The RSPB and APB submitted a joint follow-up application to the Darwin Initiative in late 2001, which was unfortunately unsuccessful. Fundraising became a major part of the work of both the RSPB and APB. Both organisations targeted several international organisations, including Wetlands International and the Global Peat Initiative as well as several US-based foundations. These approaches are ongoing but have not yet secured funding. Perhaps the biggest impact was the pivotal role both organisations played in securing the inclusion of the longer-term recommendations for two of the sites (Sporova and Zvanets) into the multi-million-dollar GEF-sponsored Polesie Project. Funding for the implementation of the urgent recommendations in the management plans would therefore leverage much larger additional funding in subsequent years. Finally, both organisations wrote and presented a proposal to the Michael Otto Foundation in Germany, who agreed to contribute a portion of the funds (USD 60,000) necessary for management plan implementation.

12. Sustainability and Legacy

The most enduring project achievement is the set of management plans and the management planning procedure piloted within the framework of the project. The project staff and resources will be fully involved in the next stage, management plan implementation. All project partners have been – and will remain – in touch with the project team, thereby ensuring their involvement in future conservation actions.

As already stated above, the project's management planning expertise has already been adopted in other conservation initiatives – e.g. the UNDP-GEF Pripyat project. The project could have attained an even higher level of effectiveness if GIS technologies had been used to monitor habitats and forest- and land-use at project sites and in adjacent areas. Another area with potential for improvement is the coordination of management planning procedures with special forest certification activities carried out at the project sites.

Throughout the lifetime of the project, efforts have been made to secure funding for the implementation of the management plans, particularly the most urgent prescriptions they contain. Funding applications have prepared and submitted to a number of international conservation foundations.

13. Value for money

Considering that the resources available to the project matched the requirements almost exactly and enabled the delivery of all objectives, the project can be rated as having achieved excellent value for money.

Authors

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Appendix I: Project Contribution to Articles under the Convention on Biological Diversity (CBD)

Please complete the table below to show the extent of project contribution to the different measures for biodiversity conservation defined in the CBD Articles. This will enable us to tie Darwin projects more directly into CBD areas and to see if the underlying objective of the Darwin Initiative has been met. We have focused on CBD Articles that are most relevant to biodiversity conservation initiatives by small projects in developing countries. However, certain Articles have been omitted where they apply across the board. Where there is overlap between measures described by two different Articles, allocate the % to the most appropriate one.

Project Contribution to Articles under the Convention on Biological Diversity		
Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use	30	Develop national strategies which integrate conservation and sustainable use. <i>The project piloted in developing first-ever in Belarus management plans for conservation of key mire tracts. The plans were subsequently approved by the Ministry of Environment.</i>
7. Identification and Monitoring	10	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities which have adverse effects; maintain and organise relevant data. <i>The management plans identified particular threats to biodiversity at three project sites, proposing a list of conservation actions to prevent further degradation and foster sustainable use.</i>
8. In-situ Conservation	10	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources. <i>During the development of management plans, protected areas were expanded, their status raised. Recommendations were introduced for prevention of further degradation of habitats, restoration of hydrological regime, sustainable land-use and forest-use recommended both inside and on adjacent areas.</i>
10. Sustainable Use of Components of Biological Diversity	20	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the

		private sector. <i>The three management plans aimed at conservation and sustainable use of mire biodiversity have been officially approved and enacted by the government (Ministry of Environment).</i>
12. Research and Training	10	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations). <i>The project provided necessary scientific and technical training to a team of experts, who then applied their expertise in elaborating prescriptions for conservation and sustainable use of biodiversity at project sites.</i>
13. Public Education and Awareness	20	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes. <i>Public awareness formed a significant component of the project strategy, which aimed at publicizing project activities to a wider possible audience as well as to propagate project successes.</i>
Total %	100%	Check % = total 100

15. Appendix II: Outputs

Code	Total to date	Detail
Training outputs		
3	Number of other qualifications obtained (MSc)	Three Belarusians have attained MSc qualifications: <ul style="list-style-type: none"> • Lyubov Kozulina • Elena Zanimon • Tatiana Simon
4a/b	Number of undergraduate students receiving training	Nine Belarusian undergraduates received a total of 3 weeks' training in ecological methods: Ms Lyubov Kozulina, Ms Elena Zanimon, Mr Oleg Bykov, Mr Alexander Tchaikovsky, Ms Svetlana Maleyonok, Ms Elana Babushnikova, Ms Veronika Protasevich, Ms Irina Vershitskaya, Ms Irina Bernekovich (details of training are presented above)
4c/d	Number of postgraduate students receiving training (not 1-3 above)	Four Belarusian postgraduates received 2 weeks' training in ecological methods: Ms Oksana Ignatyuk, Mr Dmitry Zhuravlev, Ms Rita Minets, Mr Oleg Ostrovsky
6a/b	Number of people receiving other forms of short-term education/training (i.e. not categories 1-5 above)	One Belarusian hydrologist (Dr Nikolay Shevtsov) received one weeks' training in computer modelling in the UK
		One Belarusian entomologist (Mr Viktor Gurin) received 2 weeks' training in the UK in identification of aquatic warbler food by faecal analysis
		One Belarusian aquatic warbler ecological data processing expert (Ms Lyubov Vergeichik) received 2 weeks' training in the UK in statistical modeling, database management and other statistical and ecological methods (further details are given above).
		35 Belarusians received management planning training in three week-long RSPB-led pathfinder workshops
7	Number of types of training materials produced for use by host country(s)	A set of management planning guidelines was developed and published in Russian
Research Outputs		
8	Number of weeks spent by UK project staff on project work in host country(s)	A total of 26 weeks was spent by RSPB staff in Belarus
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	Three management plans (Sporovo, Dikoe, Zvanets) were prepared and subsequently approved by the Ministry of Environment

11a	Number of papers published or accepted for publication in peer reviewed journals	17 – detailed in Appendix III.
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	One aquatic warbler database established One hydrological database established
13a	Number of species reference collections established and handed over to host country(s)	Three reference collections established: 1. a botanical collection is available in the National Herbarium of Belarus 2. an entomological collection is stored in the Institute of Zoology of NASB 3. an aquatic warbler faeces collection is stored in the Institute of Zoology of NASB
Dissemination Outputs		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	The final project conference was run within the framework of the Second International Conference on the Ecology and Conservation of Floodplains and Lowland Mires in the Polesie Region, held in Minsk on May 22–26, 2002. The conference proved to be an important forum for national and international governmental agencies, NGOs, academics and scientists, who came together to discuss progress toward conservation objectives and the current situation in the region, and, most importantly, adopted a 5-year action plan listing the most urgent and pressing conservation issues related to the Polesie region that need to be addressed in the near future. The conference brought together over 130 participants from Germany, Netherlands, France, Switzerland, Poland, Lithuania, Russia, Ukraine and Belarus.
14b	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/ disseminated.	<ul style="list-style-type: none"> • Kozulin A., Flade M., Vergeichik L. 'Monitoring of Aquatic Warbler in Belarus'. 15th International Conference of the EBCC, Hungary, 2001. • Vergeichik L, Schaffer N. Management Planning for Key Fen Mires in Belarus. Aquatic Warbler Conservation Team Workshop. Poland, 2002. • Kozulin A, Nikiforov M, Vintchevski A VI European Partnership Meeting of BirdLife International, Gibraltar, 2001. • Nagorskaya L. Macrobenthos of fen mires in Yaselda catchment. Ecological problems of Polesie and adjacent areas: II International Scientific and Practical Conference, Gomel, Oct 2000. • Nagorskaya L. The benthic community structure in lowland mires of Belarus. VIII Meeting of Hydrobiol. Soc. RAS (Kaliningrad, 16–23 Sept 2001).

15a	Number of national press releases or publicity articles in host country(s)	Three national press releases produced in Belarus.
15b	Number of local press releases or publicity articles in host country(s)	Nine local press releases produced in Belarus.
15c	Number of national press releases or publicity articles in UK	Two
15d	Number of local press releases or publicity articles in UK	Ten
18a	Number of national TV programmes/features in host country(s)	Five national TV programmes produced in Belarus.
19a	Number of national radio interviews/features in host country(s)	Five national radio programmes produced in Belarus.
19b	Number of national radio interviews/features in the UK	One
Physical Outputs		
20	Estimated value (£s) of physical assets handed over to host country(s)	£13,691 estimated physical assets transferred to host country
22	Number of permanent field plots established	Six permanent field plots established: <ul style="list-style-type: none"> • Dikoe – 1 • Zvanets – 1 • Sporovo – 3 (Kostyuki, Peshchanka, Kokoritsa) • Prostyr – 1
23	Value of additional resources raised for project	Total match funding contribution £65,649.

Appendix III: Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications Database that is currently being compiled.

Mark (*) all publications and other material that you have included with this report (Annex V)

Type (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
Journal	Aquatic insects (Insecta: Collembola, Ephemeroptera, Odonata, Heteroptera, Trichoptera) in landscape zakaznik Zvanets - Moroz M., Chakhorovsky S., Levandovsky K., Buchynsky R., 2001*	Vesti NAN Belarusi	# 1 Attached www.ac.by	1.3
Journal	Fauna of aquatic coleopterous insects (Insecta: Coleoptera) in landscape zakaznik Zvanets - Moroz M., Maximenkov M., 2001*	Parki Narodowe i Rezerwaty Przyrody	# 2 http://trawers.skrzydla.media.pl/KT98/PARKI_NARODOWE_I_REZERWATY.html	4
Journal	Ecological and fauna characteristics of aquatic ticks (Acari: Hydracarina) in landscape zakaznik Zvanet - Bezyadka E., Tsikhotska M., Moroz M., Mukhin Y., 2001*	Prirodnye Resursy, Minsk	# 3 www.ac.by	0.8
Journal	Rare and protected insect species in Dikoe zakaznik, Maximenkov M., Moroz M., Gurin V., 2001*	Materials of International scientific conference, Belorussian State University, Minsk	# 4 Belarusian State University 4 Skorina ave., 220080 Minsk, Belarus	3
Journal	Ecological and faunistic characteristics of Crabus L. in major fen mires of Belarus. Minets R. 1999*	Materials of International Conference on Water Ecosystems, Belorussian State University,	# 5 Belarusian State University 4 Skorina ave., 220080 Minsk, Belarus	3

Journal	New registration of genus of <i>Chlaenius bonelli</i> in the National Park Belovezhskaya Pushcha. Minets R., Grichik V., 2000*	Vestnik BGU, 2000	# 6 Belarusian State University 4 Skorina ave., 220080 Minsk, Belarus	0.6
Book	Ostracoda (Crustacea) in lowland floodplain of the river Pripyat. Nagorskaya L., de Jonge J. *	Escobar-Briones E. & Alvarez F. Eds. Modern Approaches to the Study of Crustacea. Kluwer Acad./Plen. Publ. (p. 263-274), 2002	# 7 www.wkap.nl/prod/b/0-306-47366-6	99.50
Journal	Habitat diversity and ostracods distribution patterns in Belarus. Nagorskaya L., Keyser D. *	Hydrobiologia p. 1-29, 2002	# 8 Institute of Zoology 27 Akademicheskaya str., Minsk 220072, Belarus	1.8
Journal	Threatened and protected invertebrate species in zakaznik Zvanets. Maximenkov M.V., Moroz M.D., Gurin V.M., Kulak A.V., Shavanova T.M., 2000*	Materials of International Scientific Conference "Fauna and flora of the Bug region and adjacent areas in 20-21 centuries". Pushkin Brest State University, 2000	# 9 Brest State University 68-116 Lenin str. Brest 224000, Belarus	2
Journal	Species composition and some aspects of the population structure of genus of <i>Carabus</i> in major fen mires of Belarus. Minets R., 2000*	Vestnik BGU, Minsk 2000	# 10 Belarusian State University 4 Skorina ave., 220080 Minsk, Belarus	0.5
Journal	Preliminary results of research of aquatic coleopteran insects (Insecta Coleoptera) in the landscape zakazniks "Zvanets". Moroz M.D., Maximenkov M.V., 2001 *	Materials of International conference "Biological diversity of Belarus: results of study and prospects for conservation". Minsk 2001	# 11 Institute of Zoology 27 Akademicheskaya str., Minsk 220072, Belarus	5
Journal	Preliminary results of research of aquatic invertebrates in Sporovsky zakaznik, Moroz M.D., Maximenkov M.V., Besyadka E., Chakhorovsky S.,	Materials of republican scientific conference "Antropogenic dynamics of landscapes and problems of	# 12 Institute of Zoology 27 Akademicheskaya str., Minsk 220072, Belarus	5

	2001*	conservation and sustainable use of biological diversity", Minsk 2001		
Journal	World population, trends and conservation status of the Aquatic Warbler <i>Acrocephalus paludicola</i> . Aquatic Warbler Conservation team, 1999*	Vogelwelt, 1999	# 13 AULA-Verlag GmbH Industriepark 3 56291 Wiebelsheim Germany	6
Journal	Breeding habitat, abundance and conservation status of Aquatic Warbler in Belarus. Kozulin A., Flade M., 1999*	Vogelwelt, 1999	# 14 AULA-Verlag GmbH Industriepark 3 56291 Wiebelsheim Germany	6
Journal	Aquatic insects (Insecta: Collembola, Ephemeroptera, Odonata, Trichoptera, Heteroptera, Coleoptera) in biological zakaznik Sporovsky - Moroz M., Maximenkov M., Chakhovsky S., Buchynsky R., 2001*	Prirodnye Resursy, Minsk 2001	In the print	
Journal	Fauna of aquatic ticks (Acari: Hydracarina) in biological zakaznik Sporovsky - Besyadka E., Tsikhotska M., Moroz M., Mukhin Y.*	Vestnik BGU, Minsk	In the print	
Journal	New species of aquatic ticks (Acari: Hydracarina) in Belarussian fauna. Besyadka E., Tsihotska M., Moroz M., Muhin U.*	Vestnik BGU, Minsk	In the print	

17. Appendix IV: Darwin Contacts

Project Title	Management Planning for Conservation of Fen Mire Biodiversity in Belarus
Ref. No.	
UK Leader Details	
Name	Dr Norbert Schaffer
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Partner 2 (if relevant)	
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Organisation	
Role within Darwin Project	
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