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Darwin Initiative

Annual Report

1. Darwin Project Information

Project Ref. Number	162/13/013
Project Title	<i>Establishing biodiversity monitoring networks to inform Estonian coastal wetland management</i>
Country	<i>Estonia</i>
UK Contractors	<i>Earthwatch Institute (Europe) and University of Brighton</i>
Partner Organisations	<i>NGO Läänerannik; Estonian State Nature Conservation Centre, Hiiu-Lääne Regional Centre</i>
Darwin Grant Value	<i>£177,765</i>
Start/End dates	<i>1/4/04-31/3/07</i>
Reporting period	<i>1 Apr 2005 to 31 Mar 2006, Report number 2</i>
Project website	www.vormsi.ee/darwin
Author(s), date	<i>Dr Chris Joyce (University of Brighton), Elle Puurmann (NGO Läänerannik, Estonia), Silvia Lotman (Project Outreach & Development Officer, Estonia), Dr Roger Mitchell & Nat Spring (Earthwatch Institute Europe, Oxford)</i>

2. Project Background

Project activities focus on three study areas located on coastal wetlands in west Estonia: Vormsi island, Silma Nature Reserve and Matsalu National Park. Each of these is designated as an Important Bird Area (IBA) and registered on Estonia's Natura 2000 list; Matsalu is also a Ramsar site. Project partners at each of the sites initially identified the need for a substantial expansion of wetland monitoring, and played a fundamental role in the development of the Darwin project proposal. The project is obtaining the scientific data needed to inform management through identifying key ecosystem indicators for monitoring and comparing change in both managed and neglected coastal wet grasslands. The resulting data and information are disseminated in Estonia, the Baltic states and beyond through the world wide web, publications, workshops and conferences, and a growing stakeholder network.

3. Project Purpose and Outputs

The project purpose is to establish a network of stakeholders and sites for coastal wetland monitoring in order to inform management plans and environmental policy for sustainable use and monitoring of biodiversity in coastal wetlands in west Estonia and the Baltic states. In addition, the project will increase the capacity for wetland monitoring in Estonian institutions; improve understanding and awareness of wetland biodiversity issues in Estonia, and other Baltic states; establish monitoring sites for long-term use by all WEABR stakeholders beyond the life of the supported Darwin project; promote wetland management and monitoring within the Estonian Ministry of the Environment and Ministry of Agriculture's development of agri-environmental policies; enhance the network of public and private sector stakeholders and facilitate information exchange; and train Estonian scientists in wetland monitoring skills (e.g. data acquisition/collation, reporting).

Outputs have not been modified during the year.

4. Progress

In the first year, the project was securely founded by: appointing Darwin Fellows and support staff; piloting and installing monitoring equipment; collating information on wetland monitoring and management; beginning to build the stakeholder network; hosting an introductory workshop; integrating three Earthwatch field teams with the Darwin activities; initiating the project web site; and training Estonian partners in wetland monitoring and GIS methods.

Good progress during this second year has continued to be made, achieving (and in some cases exceeding) planned outcomes. During summer 2005 three Earthwatch volunteer teams participated in monitoring activities including equipment installation and data downloading, vegetation survey, bird censuses, and small mammal live-trapping and radio-tracking. The last technique (radio-tracking) represents a novel method of field survey for small mammals in Estonia, and was designed to indicate mammal dynamics in wetland landscapes. It proved successful, and will be repeated in the 2006 field season. Information from the field work was integrated into an update of the project web site in October-November 2005, and all data were electronically disseminated to Estonian partners by January 2006. The knowledge, experience and data gained from the Darwin project has been incorporated into monitoring plans being drafted for the study sites (an example is presented in Annex 2), whilst field research and monitoring is being used to guide restoration management at three of the coastal wetland sites (i.e. Hosby and Rumpo on Vormsi island, and Silma), which is being implemented by project partners NGO Läänerannik

and Silma Nature Reserve Administration. The network of stakeholders continues to develop (Annex 3), encouraged during the year by email communication, meetings, and conference attendance. The programme of training and meetings was expanded this year with more exchange between Estonian and UK partners (examples are in Annex 4). Training was more targeted than in the first year to meet the specific needs of Estonian stakeholders, for example on applications of management planning software, developing grant proposals for European Union funding, and to learn about good practice in using wetlands for education and amenity. Project outputs were presented at three international scientific meetings, including one in Lithuania and another in Germany, but as no project seminars were planned this year there were no Estonian press releases. Scientific papers from the project are being produced; two are in an advanced draft and will be submitted by summer 2006.

There were no major slippages in the project framework this year, although less monitoring data were collected than anticipated. This was due to delays during the field season in installing water level monitors (e.g. in wet, clay soils at Matsalu) and by software problems for the soil moisture monitors, such that collected data could not be retrieved for analysis. However, all monitoring equipment was set up by September 2005 and advice received from the manufacturers of the loggers should resolve data retrieval issues in spring 2006. Further training in monitoring systems is also being considered for 2006-7.

In January 2006, reorganisation of nature conservation in Estonia resulted in the formation of the Estonian State Nature Conservation Centre as an official body incorporating two of the project partners – Silma Nature Reserve administration and Matsalu National Park administration. However, this raised no complications in the Darwin project work.

Additional outputs were achieved during the year. One additional monitoring site (with two stations) was established (at Rumpo on Vormsi island), representing a significant increase in monitoring capacity compared with projected outputs, taking the total number of permanent vegetation quadrats beyond the project target of 96 to 112. It was also possible to deliver additional capacity building by providing training to an Estonian stakeholder, Marko Valker, who is the specialist for nature education at Silma Nature Reserve. Valker visited the UK in October 2005 to learn about the utilisation of wetland nature reserves for education and amenity (Annex 4). Conference participation also exceeded expectations following the contacts made with the Baltic Environmental Forum; Estonian and UK project staff attended a seminar in Lithuania to develop grassland monitoring for the EU and presented the Darwin project methods to experts from Lithuania, Latvia, Estonia and Sweden.

<i>Work plan for the next reporting year</i>		
Date	Financial year:	Description
<i>Apr 06</i>	<i>Apr-March 2006/7</i>	<i>2 further draft monitoring plans produced.</i>
<i>May 06</i>		<i>Project team review meeting; checking and calibrating monitoring stations.</i>
<i>Throughout year 06</i>		<i>Stakeholder network sustained by email, web site updates, meetings and site visits.</i>
<i>Throughout year 06</i>		<i>Monitoring data collected.</i>
<i>Jun-Aug 06</i>		<i>3 Earthwatch teams fielded.</i>
<i>Oct 06</i>		<i>Produce third 6-month report for Darwin.</i>
<i>Jan 07</i>		<i>Draft management manual produced.</i>
<i>Jan 07</i>		<i>Workshop 2 hosted.</i>
<i>Feb 07</i>		<i>3 final monitoring plans produced.</i>
<i>Mar 07</i>		<i>Final management manual produced.</i>
<i>Apr 07</i>		<i>Third year annual report submitted to Darwin.</i>
<i>July 07</i>		<i>Final report submitted to Darwin.</i>

5. Actions taken in response to previous reviews

The review of last year's annual report was immediately circulated to all partners by email and was discussed in project review meetings in Estonia in July and August 2005. The comments received were considered very useful and have been acted upon. Thus, contact was made with the Baltic Environmental Forum (BEF), which has led to successful cooperation. Initial meetings were followed by an invitation by the BEF to participate in a seminar to establish grassland monitoring protocol for the Baltic States as they adopt EU policies. Project team members Joyce and Lotman were able to disseminate information on monitoring wet grasslands from the Darwin project. Also, as proposed in the review, the opportunity presented by healthy travel funds was taken and an additional Estonian team member was invited to the UK for personal capacity building. Marko Valker spent approximately seven days in Southern England reviewing good practice for promoting wetlands as educational, amenity and monitoring resources. As noted in last year's annual report review, the website was not fully operational at that stage, but efforts have been made to put more information to the website and eliminate non-functional links.

6. Partnerships

The collaboration between UK and Estonian partners has been excellent and regular. The communication is mostly carried out by email, but there have also been four UK project team members visiting Estonia and five Estonian team members' visits to the UK. The fieldwork outputs are published on the project website and the network of stakeholders continues to develop through email communication, meetings and conference attendance. There have been no difficulties with relationships between UK and Estonian partners. The re-structuring of the Estonian nature conservation

organisation in January 2006 is not expected to present any new problems, as all partners have been retained with similar responsibilities within the new agency. Indeed, the reorganisation may offer scope for a greater influence as the new institution has a wider remit than the previous smaller bodies and is directed by a stakeholder based at one of the study areas (Matsalu).

The project continued to maintain the links made in its first year with similar projects investigating the ecology, management and monitoring of wetlands in Estonia. This includes projects at Pärnu, Tartu, Vormsi and Silma supported by the EU, Estonian universities, and the Estonian government. The project team were able to collaborate with the Baltic Environmental Forum (BEF) project on Natura 2000 monitoring. In July 2005 there was an initial meeting held in Tallinn and as a consequence Darwin Fellow Lotman and team member Joyce attended the BEF seminar on grassland monitoring in Lithuania where Joyce also made a presentation about the Darwin project. Darwin Fellows Lotman and Berg also participated in a workshop in September 2005 organised by the Working Group on Population and Community Ecology (University of Hamburg) in Germany where information on coastal ecology research was shared.

7. Impact and Sustainability

The high profile of the project in west Estonia, and in Estonia amongst conservation groups and academics has been maintained. The challenge is extending the influence and impact further, especially to other sectors (e.g. land owners, policy-makers) and internationally. During the year, efforts have been made to maintain the profile of the project within Estonia by sustaining the stakeholder network, including canvassing opinions about management planning for wetlands. There have been successes regarding extending the international profile of the project, mainly through participation at meetings and conferences in Lithuania, Germany, and the UK. These were also selected for their capacity-building and training benefits; for example, Darwin Fellow Lotman and early career researcher Berg participated in two scientific events – the British Ecological Society annual conference in UK and a Coastal Ecology Workshop in Germany.

The sustainability and exit strategy have also been enhanced by the training undertaken this year, with activities focussed upon practical skills and knowledge that can be disseminated within Estonia. For instance, Estonian partners identified the need for management planning and fund-raising knowledge so a training session on the Conservation Management System (CMS) software at Pagham Harbour nature reserve, England, was organised and the Darwin Fellow Lotman participated in a workshop on European Union structural funds delivered by RSPB Wales.

There has not been any special media coverage during this year, although concerted effort has been made to update the project web site and promote it in all communications. Furthermore, agreements have been made by the Darwin Fellow Lotman and Estonian journalists for news items during the field work season, including two articles to be released in the Estonian media next year.

The project exit strategy involves enhanced capacity for wetland monitoring within Estonia, and volunteer-support from Earthwatch to continue long-term monitoring at key sites. Progress has continued in both respects during this second year of the project. Training of Estonian staff, equipment installation and increasingly effective dissemination are all contributing to enhanced monitoring capacity, whilst plans for field research and monitoring during summer 2006 fully incorporates Earthwatch volunteers into the protocol. Initial indications are that volunteer numbers for the

summer 2006 field season are satisfactory and that a full programme of field teams will run. Monitoring sites have been used to demonstrate techniques and capabilities to Estonian conservation staff.

The project team is also considering additional funding opportunities to support its activities in the future. Meetings are planned for May 2006 that will address potential funding sources (e.g. European Union, Darwin post-project funds) so that the partnership can continue to develop.

8. Outputs, Outcomes and Dissemination

The initial project implementation timetable has been followed and outputs are mostly consistent with original plans. All field monitoring stations were established by August 2005, including two stations at Rumpo (Vormsi island) that are additional to original plans. However, the collection and validation of soil moisture data are delayed until May 2006 when problems over data retrieval should be overcome. The project team review meeting, scheduled for April 2006, has also been delayed until May due to snow and ice in the study areas, which the team would need to visit to review progress. Considerable resources have been applied to training this year, such that the programme is now on track following a delayed start to the project in 2004. Effort to maintain the web site has also been made so that this can remain a key output during and after the project. Dissemination outputs are likely to be exceeded in relation to conference participation, as future plans to disseminate the project activities across the Baltic states and internationally include conferences in Poland and one convened by the US Society of Wetland Scientists. Scientific papers for peer-reviewed journals are in draft but further attention will need to be given to completing these in the coming year. Dissemination to the media in the host country and UK has under-performed so far, despite attempts particularly in the first year. A campaign will need to be instigated for the closing phase of the project.

In order to extend the stakeholder network beyond the existing core of conservationists and academics, dissemination in the host country (and beyond) targeted all practitioners, policy-makers, or scientists with an interest in wetlands. Activities included regular email contacts, face to face meetings, updating and publicising the project web site, and attendance at conferences. However, this activity was only partially successful, with land owners (particularly absentee) and farmers proving particularly difficult to reach and engage. Nevertheless, progress took place in west Estonia during the Earthwatch field season in summer 2005, with members of the local farming and land-owning communities at Vormsi, Silma, and Matsalu engaging with volunteers and scientists on a regular basis. Also, some feedback was received from land managers on the wetland monitoring plans and systems being produced by the project and these drafts will be disseminated further during 2006. It is intended that dissemination activities will continue after the project has ended via the partner organisations, the project web site (which will be maintained on the Vormsi island server), and through the continued presence of the Earthwatch-funded project in Estonia. It is very encouraging that project partners are initiating, or have implemented, larger-scale restoration management (e.g. reed clearance, grazing) at key sites identified by this project and it is expected that these will continue to be monitored and serve as demonstration sites.

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
4C & 4D	<i>Training weeks for 3 Estonian postgraduates</i>	2	27			29
5	<i>1 Estonian trained (in months)</i>	6	12			18
6A	<i>Estonian stakeholders attending workshop</i>	30	0			30
6B	<i>Workshop on coastal meadow monitoring</i>	1	0			1
7	<i>Type of training used in Estonia (web)</i>	1	(updated)			1
8	<i>Weeks spent by UK project staff in Estonia</i>	18	21			39
11B	<i>Papers submitted to peer-reviewed journal</i>	0	2 (pending)			2
12A	<i>Website with integrated database as focal point for wetland monitoring</i>	1	(updated)			1
14A	<i>Workshops organised</i>	1	0			1
14B	<i>Conferences attended</i>	0	4			4
15A	<i>Local press release (Estonia)</i>	1	0			1
22	<i>Integrated permanent wetland monitoring stations</i>	0	8			8

Table 2: Publications

Type *	Detail	Publishers	Available from	Cost
(e.g. journals, manual, CDs)	(title, author, year)	(name, city)	(e.g. contact address, website)	£
Article (pdf)	Joyce, C.B. and Burnside, N.G. (2004) Baltic coastal wetlands: back from the brink? National Wetlands Newsletter, 26, 11-15	Environmental Law Institute, Washington DC, USA	http://www.vormsi.ee/darwin/index.php?lang=english&teema=researchers&ala=articles	None

9. Project Expenditure

- Please expand and complete Table 3.

10. Project Expenditure

- Please expand and complete Table 3.

Table 3: Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)

Item	Budget (please indicate which document you refer to if other than your project schedule)	Expenditure	Balance

- Highlight any recently agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget.

11. Monitoring, Evaluation and Lessons

Monitoring and evaluation of the project has generally taken place with reference to the logical framework. Face-to-face project reviews with members of both the UK and Estonian teams took place in Estonia or the UK seven times during the course of the year. At these meetings, the first year annual review was discussed, training needs were scrutinised and plans for field work evaluated. Monitoring of the field research in summer 2005, which incorporated field work for the Darwin project, was

achieved using Earthwatch volunteer feedback (orally and written forms) and the annual report written by project staff. Volunteer feedback was extremely positive, particularly the appreciation of the value of co-ordinated, long-term monitoring.

The output from the Earthwatch field season (specifically the completion of testing the four Darwin monitoring stations incorporating water level monitors, soil moisture loggers and surveying 112 permanent vegetation quadrats), contributed to the establishment of a network of functioning monitoring sites, which is a key project purpose. Other notable indicators of project achievements are the maintenance of the project web site and participation at conferences to disseminate project information. Draft monitoring plans have been produced and have been used to sustain the stakeholder network by inviting them to participate in their development. Dissemination of the research on biodiversity indicators is taking place through conference presentations and peer-reviewed papers, two of which are due to be submitted to journals shortly.

This year's work has reiterated a clear need for a co-ordinated and well-equipped monitoring strategy for Estonian coastal wetlands at this important time when environmental monitoring generally is achieving a higher political profile. This was demonstrated by the project's participation in the Baltic Environmental Forum workshop to establish monitoring protocols for reporting to the EU, which confirmed that efforts have so far been extremely limited and inconsistent. The delay in collecting some monitoring data from the hydrological equipment this year may also constrain the monitoring strategy, although this limitation is expected to be addressed in 2006. Earlier project constraints have not yet been entirely overcome, particularly being able to engage absentee landowners who may hinder monitoring and wetland management at important Estonian sites. Future plans are therefore to continue seeking to reach out to a wider range of stakeholders, including landowners and farmers, by using innovative activities, e.g. demonstration sites and practices. Monitoring plans and management guidelines will also need to incorporate the practical lessons learned in the field so that realistic monitoring protocols are disseminated.

12. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)

■ I agree for ECTF and the Darwin Secretariat to publish the content of this section

In this section you have the chance to let us know about outstanding achievements of your project over the year that you consider worth highlighting to ECTF and the Darwin Secretariat. This could relate to achievements already mentioned in this report, on which you would like to expand further, or achievements that were in addition to the ones planned and deserve particular attention e.g. in terms of best practice. The idea is to use this section for various promotion and dissemination purposes, including e.g. publication in the Defra Annual Report, Darwin promotion material, or on the Darwin website. As we will not be able to ask projects on an individual basis for their consent to publish the content of this section, please note the above agreement clause.

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2005/2006

Project summary	Measurable Indicators	Progress and Achievements April 2005-Mar 2006	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 			
<p>Purpose <i>(insert original project purpose statement)</i></p> <p>A network of people and sites for coastal wetland monitoring established to inform Estonian (and Baltic) management plans and environmental policies</p> <p>Key ecosystem indicators identified for effective monitoring and comparing change in managed and neglected coastal wetlands</p> <p>Coastal wetlands conserved through sustainable use and informed management</p>	<p><i>(insert original purpose level indicators)</i></p> <p>Research findings and monitoring data shared amongst Estonian (WEABR) stakeholders</p> <p>Monitoring guidelines adopted in WEABR management plans</p> <p>Wetland monitoring database and information on key indicator species incorporated into website</p> <p>Attendance of Estonian stakeholders at workshops</p> <p>Management manual disseminated to extended network (Baltic stakeholders)</p> <p>Enhanced management on WEABR coastal wetlands</p>	<p><i>(report impacts and achievements resulting from the project against purpose indicators – if any)</i></p> <p>All data disseminated to WEABR stakeholders by January 2006</p> <p>Indicator species information and monitoring data updated on web site November 2005</p> <p>Draft monitoring plan produced March 2006</p> <p>Restoration management implemented at two study sites (Hosby and Rumpo) and planned at another (Silma)</p>	<p><i>(report any lessons learned resulting from the project & highlight key actions planning for next period)</i></p> <p>Some stakeholders difficult to reach. Activities will target such stakeholders, e.g. landowners, farmers, policy-makers, international scientists</p> <p>Monitoring more resource-intensive and problematic than anticipated, e.g. technical difficulties. Re-calibration planned and further training investigated.</p>

Outputs			
<i>(insert original outputs – one per line)</i>	<i>(insert original output level indicators)</i>	<i>(report completed activities and outcomes that contribute toward outputs and indicators)</i>	<i>(report any lessons learned resulting from the project & highlight key actions planning for next period)</i>
People network and monitoring sites established and integrated for sustained monitoring programme	Monitoring equipment in place at 3 reserves; 3 monitoring plans produced Stakeholders contacted by email Vegetation data collated from 96+ quadrats annually Bird and small mammal species and activity recorded annually	Equipment installed at 4 reserves; 1 draft monitoring plan produced Stakeholders contacted by email/meetings Vegetation data collated from 112 quadrats Bird species and small mammal activity surveyed and data collated	Hydrological equipment is robust but can be temperamental; it is to be checked and calibrated as necessary Stakeholders to be updated and expanded via web, email, meetings, demonstrations, and Darwin workshop Vegetation, birds and small mammals to be monitored
Effective practice for coastal wetland monitoring (including key biodiversity indicators) disseminated	Management manual produced 2 annual and 1 final report Website launched in year 1 2 workshops held	Background research on wetland monitoring/management ongoing Website maintained	Information to be regularly uploaded to web site Second workshop planned for January 2007 Monitoring plans being drafted, to lead to draft management manual
Biodiversity indicators for coastal wetland ecosystems identified	Scientific quality of output evaluated by peer-review of submitted papers	1 paper produced on plant community indicators 1 paper produced on small mammal indicators	Papers to be submitted for peer-reviewed journals April-June 2006

Note: Please do NOT expand rows to include activities since their completion and outcomes should be reported under the column on progress and achievements at output and purpose levels.