Darwin Initiative for the Survival of Species

Project: 162 / 11 / 025

Cross-border conservation strategies for Altai Mountain endemics (Russia, Mongolia, Kazakhstan)

Annual Report (Year 1)

May 2003

CONTENTS:

1. DARWIN PROJECT INFORMATION

Project title	Cross-border conservation strategies for Altai Mountain Endemics (Russia, Mongolia, Kazakhstan)
Country(ies)	UK, Russia, Mongolia, Kazakhstan
Contractor	University of Sheffield
Project Reference No.	162 / 11 / 025
Grant Value	£180,780
Start/Finishing dates	01.04.2002 – 31.03.2005
Reporting period	01.04.2002 – 31.03.2003

2. PROJECT BACKGROUND

The project aims to investigate the spatial distribution of endemic species and to develop a strategy for their protection in the Altai Mountains – one of the centres of biodiversity in Eurasia. The study area covers contiguous parts of three states – Russia, Mongolia and Kazakhstan.

3. PROJECT OBJECTIVES

The main purpose of the project is to collect and collate (for the first time) information on the rare and endemic flora of the whole of the Altai Mountain region. The project will apply British expertise to investigate species spatial distributions and develop appropriate database systems, to identify "hot spots" of biodiversity within the area on the basis of the analysis of existing and newly-gathered information on species distribution, and to investigate habitat controls on species distribution. Economic activities in the region (including land management regimes) will also be examined and their actual or potential impact on rare and endemic species of flora and fauna will be assessed. The information will be used to (1) identify species and areas under greatest threat, (2) develop strategies to preserve the biodiversity in this cross-border region and (3) formulate species and site-based habitat action plans that will optimise the existing network of protected areas through the organisation of new areas and improvement of management and overall performance of existing ones.

With the agreement of the Darwin Secretariat, there was a change in the proposed work programme to bring the UK visit of Russian participants forward from Year 2 to Year 1 in order for us to attend an international conference “Nature and People” in Pitlochry (Scotland) under the auspices of ‘International Year of Mountains’. A poster giving background about the Altai and details of the project was presented at this conference.

4. PROGRESS

This is first reporting period for the project.

Timetable / Milestones:

1. Participating scientists held discussions with following local authorities and Regional Ecological Committees:

a) Hovd Regional Committee of Ecology and Sustainable Use of Nature (chairman of committee – O. Mungtongtokh), Hovd, Mongolia;
b) Department of Protection of Environment and Biodiversity of East Kazakhstan (Head of Department – Rishat Zh. Adamov), Ust-Kamenogorsk, Kazakhstan;
c) El-Kurultai (Regional Parliament) and Committee on a Science and Education of Republic Altai (Chairman of Committee – Vasili A. Tyudenev), Gorno-Altaisk, Altai Republic, Russia;
d) Administration Kosh-Agach Region of Republic Altai (Head of Administration – Aulkhan Djatkambaev);
e) Committee of Ecology of the Altai Region of Altai Province (Chief of the Committee – Alexander G. Suzik), Altaiskoe, Altay Province, Russia;

2/3. Workshops, field training and fieldwork

a) Start-up meeting and workshop were held in Tomsk, July 14-16, 2002. Host country participants from TSU and 25 students (incl. 8 botanists and 14 geographers from Faculty of Biology and Soil Sciences, Faculty of Geology and Geography, TSU), took part in the seminar. Background information on the Altai was presented by TSU staff. UK project participants presented information on the Darwin Initiative, and provided training in UK approaches to biodiversity conservation, including preparation of management plans, and computer modelling techniques to assist in identification of biodiversity hotspots and optimisation of reserve networks;
b) Some 50 undergraduate students (biologists and geographers) from Tomsk State Pedagogical University (2 groups) received training (2 weeks) at the Tomsk State University Altai Mountain Research Station in July, 2002. Details were described in the University newsletter;
c) UK project participants lead a one-day field meeting/seminar in the Altai Mountains on 20.07.2002, presenting information about the Darwin Initiative and approaches to biodiversity conservation and leading general discussions on global conservation and environmental issues. A total of 21 students (18 from TSPU and 3 from TSU) were involved;
d) A total of 3 postgraduate students and 10 undergraduate students involved in the project from host countries gained extended field experience and training during the project field surveys.

Fieldwork included the following expeditions:

a) Expedition to East Kazakhstan in May/June, 2002 (25 days);
b) Joint expedition with Tomsk and UK project participants to Central and Southeast Altai, July, 2002 (10 days);
c) An expedition was made to remote and inaccessible areas in the Western Tuva region in August 2002 (28 days). During this field survey, for the first time the flora of the ranges of Southern Altai and Tuva was purposefully studied, herbarium specimens and photos of rare and endemic taxa were taken, and field inspections of habitats and features of distribution of such species were carried out.

Additional training activities:

A change in the proposed work programme to bring the UK visit of Russian participants forward from Year 2 to Year 1 allowed seven project participants to attend the international conference "Nature and People" in Pitlochry (Scotland) under the auspices of the 'International Year of Mountains'. A wide range of papers and posters were presented by delegates from across Europe, which was particularly valuable in acquainting us with different approaches to biodiversity conservation issues, many of which are relevant to those our project aims to address. In addition, a workshop was held in Sheffield to provide further training in the use of computer methods to store and manage information on species distributions, and to study geographic (or macro) scale species patterns and dynamics and their consequences for conservation. Visits were made to five National Parks in order to acquaint Russian participants with some of the diversity of the British landscape, whilst promoting discussion on UK approaches to conservation.

Three students from the Altai Republic were trained in nature conservation institutions of the Altai Republic under the supervision of Natalia Semenova.

Natalia Semenova attended a workshop in Germany entitled "Management of protected areas of CIS", organized by the German "Society for the Promotion of Technical Research" and "Bundesamt für Natur".

Other research activities:

All available references on distribution of species in territory of Altai and in contiguous regions have been critically analysed. On the basis of this work, a preliminary list of 110 endemic plant species of the Altai Mountains has been prepared.

An almost complete (without Fabaceae) inventory has been carried out of herbarium specimens of Altai endemic species preserved within the Herbarium of the Central Siberian Botanical Gardens (Novosibirsk), the South Siberian Botanical Gardens (Barnaul) and the major part of the collection of the West Siberian Department in the Herbarium of Tomsk State University. During this work all available specimens of endemic taxa were examined, their correct taxonomic position specified, and herbarium details recorded for entry into the database.

EXCEL software was used initially to store raw data. However, work has started on the development of the structure of a computer database and definition of the list of necessary attributes to be registered for each endemic species. Data entry onto this database has been started. Information on about 700 herbarium samples of endemic plants has been recorded.

Andrei Pyak and Alexandr Ebel presented reports at the international conference "Problems of Botany of South Siberia and Mongolia" that was held in Barnaul in November 2002, for which the presence of endemic plant species in one nature reserve of the Kazakhstan Altai – Zapadno-Altaisky reserve ("West-Altai" reserve) – and in four reserves of the Russian Altai was analysed. This showed 12 endemic species in Zapadno-Altaisky reserve, 13 in the Altaisky reserve, 7 in the Katunsky reserve, 5 in the Tigereksky reserve, and 11 endemic species in the Mongun-Taiga reserve. Two papers were published from this, plus three others (see Table 2). Information from the project was also presented at two workshops in Tomsk.

Texts and illustrations for the project web-site {www.ecos.tsu.ru/altai} have been collected, and now the information is being loaded on to the web-site. Large-scale electronic maps for the Altai region, and broad-scale topographic maps for three countries (Russia, Kazakhstan and Mongolia) have been collected.

Two geography students are currently working on our project. One is preparing work for a diploma degree on “Ecotourism in Altai Mountains and problems of Nature Protection”. The second student is now in the Altai Republic, where she is working in the Government and Ecological Committee of Republic Altai, collecting data to contribute towards the development of cross-border conservation strategies for Altai Mountain endemics.

Because of the location of the study area within three different independent states, we have found some problems in obtaining and combining cartographic data at different scales and different degrees of detail. However, these difficulties have been practically overcome. For a cartographical base, small-scale maps (1:1 000 000) were downloaded from the Internet GIS Server (http://www.maproom.psu.edu/dcw/) in the form of ArcInfo map layer files, and converted later to Arcview GIS shapefile. These maps cover the whole territory of all the selected parts of the Altai. Any additional parts of maps needed at a larger scale for detailed work will be added using existing printed maps for the study area.

The research has been extended to embrace some relict and particularly rare species that are under the threat of extinction in the Altai Mountains, in addition to strictly endemic species.

Workplan for the reporting period April 2003 – March 2004

June 03	Collation of information; population of databases with information gathered in the first year completed
Aug. 2003	2 month field work, including student training completed
Sept. 2003	Training workshop in East Kazakhstan
Oct. 2003	Training workshop in Gorno-Altaisk
Nov.-Dec. 2003	Further collation of information; population of databases; primary data analysis together with one UK scientist visiting host country
Jan.-Feb. 2004	Start of investigation of the relationships between rare and endemic species and their habitats, and development of principles and methods for the protection of rare and endemic species in the Altai commenced

5. PARTNERSHIPS

During this reporting period e-mail contact has been maintained between UK and host country partners. Colleagues in Tomsk have maintained contact with Kazakhstani and Mongolian participants. UK partners from Sheffield had an opportunity to take part in start-up meeting/workshop in Tomsk (Russia) and to gain an impression of the study area during a 10-day expedition in the Altai. The Russian participants visited UK in November 2002. These reciprocal visits, allowing face-to-face discussions between UK and host country partners, are very valuable in facilitating discussions and decisions regarding the project, and in promoting a greater understanding between partners.

The project team has established close connections with two host-country projects being undertaken in the Altai: "Features of the composition, structure and genesis of intermountain-depression flora of Altai-Sayan Province", sponsored by Russian Fund of Basic Researches, and "Study of the genesis and evolution of high-montane floras of Russian and Mongolian Altai on the basis of monographic study of main taxa of the flora", supported by Fund "Universities of Russia". These two Russian projects cover all the Altai – Sayan Mountain Country, and are studying the high-mountain flora and steppe flora of inter-range valleys where many endemic and rare species are found.

Contacts have been established and an arrangement for cooperation made with the work group and co-ordinator of the recently-completed international WWF project "Maintenance of

long-term preservation of biodiversity of the Altai-Sayan ecological region" Andrei N. Kupriyanov (director of the Kuzbass Branch of Central Siberian Botanical Gardens of Russian Academy of Science (Kemerovo and Barnaul)).

Participating project scientists have held discussions with local authorities and Regional Ecological Committees – see Timetable/Milestones.

6. IMPACT AND SUSTAINABILITY

Efforts to promote the project this year have exceeded expectations, and include press releases, websites, four presentations at conferences, two posters, and five publications (see Section 7). Students who participated in the field surveys/training made several presentations to the TSU Botanical Department Students Study Group. In addition, discussions have been held with local authorities in all three countries, and contact made with participants in other conservation projects.

It was felt important to engage the on-going co-operation and support of local administrative bodies at an early stage, since they will ultimately be responsible for ratifying and implementing any recommendations for actions to come out of the project. Participating project scientists have therefore held discussions with various local authorities and Regional Ecological Committees (see timetable/milestones), and these bodies expressed an interest in collaboration with the researchers working on biodiversity conservation of the Altai Mountains, as well as an interest in practically applying the expected results of the project.

Other aspects of the 'exit strategy' originally envisaged for the project are also on track, including preparation of herbarium reference collections, databases and GIS-based species distribution maps; training; preparation of 'publicity' materials and dissemination of information.

Applications have been made for participation in the 7th International conference "The natural conditions, history and culture of Western Mongolia and adjacent areas". The conference will take place in Hovd (Mongolia) in September 2003. Participants of the project will make two reports there.

Applications have been made for participation in the 11th Congress of Russian Botanical Society, which is to held in August, 2003 in Barnaul and Novosibirsk (Russia). Participants of the project will make one report there.

7. OUTPUTS, OUTCOMES AND DISSEMINATION

All of the original outputs expected in Year 1 (shown in italics) were achieved, plus many more. Information about the project has been disseminated via workshops, discussion groups, conferences, websites, press releases, articles in newsletters and other publications (see below). These dissemination activities will continue during the life of the project, and beyond, using local or international funds as available/required.

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

Code	Description	Quantity	Comments
1A	PhD submitted	1	Natalia Rudaya (Russian), "Endemic and subendemic plants of Southeast Altai, Northwest Mongolia and Southwest Tyva". PhD thesis is submitted (PhD defence passed in Tomsk State University on 27.02.03). [This PhD was started before the beginning of the project, but the student participated in one project expedition and we are using her results, as well as sharing some of our data with her work.]
3	Other qualifications	2	1. Maya Morenko (Russia), diploma "Family Chenopodiaceae in the flora of Altai Mountains". Diploma was defended on 26.03.03 in Tomsk State University. 2. Natalia Semenova (Russian), certificate of workshop "Management of protected areas of CIS", held in Germany March 2003
4A	*no. of undergraduates*	*42*	*Two groups of Russian students were trained during their field practice in Altai Mountains:* *1. 18 students from Tomsk State Pedagogical University and 3 students from Tomsk State University, 2 weeks* *2. 18 students from Tomsk State University, 2 weeks* *3 students from Republic Altai were trained in nature conservation institutions of Republic Altai under the supervision of Natalia Semenova; the first for 12 weeks, the second for 8 weeks, and the third for 4 weeks.*
4B	*no. of training-weeks*	*28*	
4C	no. of post-grads	3	Natalia Schegoleva – 3 weeks, Natalia Rudaya – 3 weeks, Tatyana Ebel – 2 weeks (all from Russia)
4D	no. of training weeks	8	
6A	Other training	1	Natalia Semenova (Russian), underwent training organized by «German Society of promotion technical research» and «Bundesamt fur Natur». [The trip was funded by this Society.]
6B	Other training (weeks)	1	I week
8		*2*	*3 UK scientists in Russia for 2 weeks*
11A	Peer-reviewed papers	2	See Table 2
11B	Other papers	3	See Table 2
14A	Workshops organised	1	Workshop in Tomsk
14B	Workshops / conferences attended	5	2 in Barnaul (Russia), 2 in Tomsk (Russia) and 1 in Pitlochry (UK)

Code	Description	Quantity	Comments
15B	*Local press releases in host country*	*3*	*1. An article in Hovd Regional newspaper "Hovdyn Medee" (Mongolia), printed in August 2002;* *2. An article in Tomsk State University newspaper "Alma Mater", printed in October 2002 (Russian version can be found at: http://www.almamater.tsu.ru/show_story.phtml?nom=2333&s=725) ;* *3. An article about the summer practical work of the students (2 weeks training) and the field seminar held with project participants and students in the Altai in July 2002 is printed in the newspaper of Tomsk Pedagogical University "Uchitel" ("Teacher"), printed in March 2003 (Russian version - http://www.tpsu.edu.ru)*
15C	*National press releases in UK*	*1*	*Press release from University of Sheffield: see http://www.shef.ac.uk/pr/press_releases/pr02/24june02.html*
22	No. of field plots	8	6 in Russian Altai and 2 in Kazakhstan Altai. These plots are the sites with high concentration of rare and endemic plants and corresponding habitats. They will be used as basic plots for the production of Habitat statements and Action plans. Namely they are in Kazakhstan: Mountain Mramornaya in AzuTau Range and Prokhodnoi Belok in Ivanovski Range; Russian Altai: Mouth of Tchuya-river, Beliy Bom, Valley of Ortolyk Brook, KizilChin Brook, Valley of Sebestiy Brook, Tobozhok Montain. [*NB: I am not certain whether these 'plots' fit within the expected scope of Output 22 – SCS*]
23	*Additional resources*	*tbc*	*To be completed*

Other publicity outputs:

A poster on the project aims (in Russian) was placed on permanent exhibition in the Department of Botany, Tomsk State University.

A poster giving background and details of the project was presented at an International conference in Scotland. This poster is now displayed in the University of Sheffield, Department of Animal and Plant Sciences.

Information about the project (English and Russian) has been placed on the TSU web site in the International newsletter section: http://www.inter.tsu.ru/programs/UK/index.htm

The project Web site can be found at www.ecos.tsu.ru/altai

Table 2: Publications

[Copies of publications have not been included with this report, but can be provided on request]

Type * (e.g. journal paper, book, manual, CD)	**Detail** (e.g. title, authors, journal, year, pages)	**Publishers** (name, city)	**Available from** (e.g. contact address, email address, website)	**Cost**
Paper	Pyak A.I. Taxonomic structure and endemic species of petrophyte flora of Russian Altai. In: Bulletin of Tomsk State University. Appendix, № 2. – Tomsk, 2002. p. 51-57 [In Russian]	Tomsk State University		*0*
Paper	Rydaya N.A. Study of endemic and sub-endemic of flora of South-East Altai and North of Western Mongolia In: Bulletin of Tomsk State University. Appendix, № 2. – Tomsk, 2002. p. 3-15. [In Russian]	Tomsk State University		*0*
Paper	Pyak A.I. On the history of the flora of Russian Altai. In: "Problems of Botany of South Siberia and Mongolia", Barnaul, 2002. [In Russian]	Altai State University		*0*
Paper	Ebel A.L. Rare species of Draba genus in Russian and Mongolian Altai. In: "Problems of Botany of South Siberia and Mongolia", Barnaul, 2002. [In Russian]	Altai State University		*0*
Paper	Ebel A.L. On the study of endemics of Kazakhstan Altai. In: "Study of vegetation of Kazakhtan and its protection" Almaty, 2003. [In Russian]	Institute of Botany and Phyto-intro-duction, Ministry of Education & Science, Republic of Kazakhstan		*0*

8. PROJECT EXPENDITURE

Table 3: Project expenditure during the reporting period

TO BE COMPLETED

Item	Revised Budget*	Expenditure	Total of claims
Salaries (specify)			
Rent ,rates heating lighting etc			
Office administration costs			
Travel & subsistence			
Capital items/equipment			
Conferences, seminars etc.			
Others			
Total			

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

With the agreement of DEFRA, a total of £6000 was brought forward from the Year 2 budget primarily to fund the visit to the UK of 5 Russian scientists.

9. MONITORING, EVALUATION AND LESSONS

Project progress can be evaluated against the agreed timetable/milestones and outputs, as well as the measurable indicators and means of verification identified in the logical framework. As described above, the project has achieved all of its planned milestones this year, including research and training activities, and has produced more outputs at this stage than originally envisaged (including five publications, and attendance at two conferences).

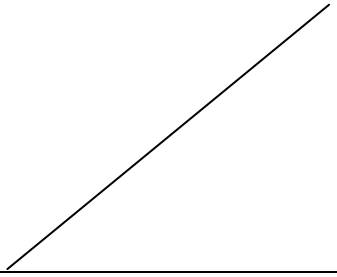
This year, we have been familiarized with modern methods of biodiversity conservation, including those that try to take into account economic validity of selected conservation activities, as well as techniques for data analysis. Important lessons were derived from the opportunity for Russian scientists to make direct contact with staff of UK and other European conservation organizations and to learn about the ways in which practical nature protection and environmental restoration initiatives are realized, especially during Case Study Field Visits during the International Conference "Nature and People" in Pitlochry (Scotland). These approaches will be incorporated into the work in preparing draft Action Plans for endemic species of the Altai and in finding ways for their implementation.

10. AUTHORS / DATE

Dr. S.C. Shaw, Dr. E. Lapshina, Dr. A. Zverev, Dr. A. Ebel (with contributions from others)

May 2003

Logical Framework

Project summary	Measurable indicators	Means of verification	Important assumptions
Goal *To assist countries rich in biodiversity but poor in resources with the conservation of biological diversity and implementation of the Biodiversity Convention*		Ratification of species and habitat action plans by Russian, Kazakhstan and Mongolian authorities and commitment to their implementation; joint reports and peer-reviewed publications; preparation and on-going use of databases and herbaria	On-going co-operation of local institutions and authorities in Russia, Mongolia and Kazakhstan; continued employment and dedication of project scientists in UK and host countries.
Purpose To bring together for the first time information from Russia, Kazakhstan and Mongolia on the distribution and habitats of the rare and endemic flora of the whole of the Altai region, and identify threats to their preservation, in order to develop strategic, cross-border approaches to biodiversity conservation.	Population of 3 databases and GIS maps with existing records plus new records from field expeditions to poorly-investigated areas; identification of biodiversity 'hot spots', controls on species distributions and threats to conservation.	Provision of information on distribution and habitats of rare and endemic species; training of scientists, students and local authority staff; recommendations for improvements in existing conservation activities and for new actions and protected areas in the biodiversity 'hotspots' identified.	On-going co-operation and support of local institutions and authorities in Russia, Mongolia and Kazakhstan; continued employment and commitment of project staff*;* continued safe access to the Altai Mountain region.
Outputs Trained scientists, students, local authority staff; scientific book on Altai endemics; journal papers; herbarium and photographic collections; web site; reports; databases; GIS maps; species and habitat action plans	Successful training, adherence to milestones and delivery of outputs on time.	Peer-reviewed publications; databases; collected specimens and habitat data; progress and final reports to Darwin Initiative, PhD and Masters degrees awarded	On-going co-operation and support of local institutions and authorities in Russia, Mongolia and Kazakhstan; continued employment and commitment of project staff in UK and host countries, time allocations appropriate*.*
Activities Training in the UK, Russia, Mongolia and Kazakhstan; collation of existing information and filling gaps through fieldwork; compilation of databases, GIS maps; reporting, publications	Scientists, students and staff receiving training as planned; fieldwork undertaken, preparation of electronic and written outputs; monitoring of progress; milestones adhered to; reciprocal UK/Russia visits	Audited statements; progress and final reports to Darwin Initiative; regularity of communications; reciprocal visits made; workshops and seminars held	On-going support from the Darwin Initiative, UK and host-country institutions; maintenance of local infrastructure (including communications); co-operation/collaboration from the local authorities; equitable weather conditions permitting field work; favourable rates/fees for money exchange and transfer.