

DARWIN INITIATIVE FOR THE SURVIVAL OF SPECIES

APPLICATION FOR GRANT

**DARWIN BIODIVERSITY INFORMATION IN THE FSU -
THE MILLENIUM OPPORTUNITY**

Please read the accompanying Guidance Note before completing this form. Give a full answer to each section; applicants will be considered on the basis of information submitted on this form. Applicants are asked not to use the form supplied to cross refer to information in separate documents. The space provided indicates the level of detail required but you may provide additional information on a separate sheet if necessary. Copies of this form are available on disk or by e-mail on request. You are asked also to complete the summary sheet attached at the end of this form. Although you may reproduce this sheet in a reasonable font, you should not expand it to more than an A4 sheet (leaving the allocated space for DETR comments to be made) as additional information will not be taken into account.

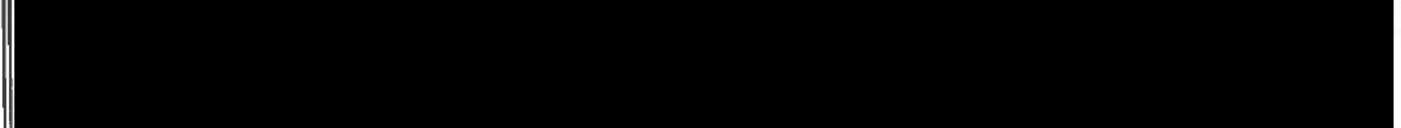
1. DETAILS OF APPLICANT

1.1 Name of organisation applying

BioNET-INTERNATIONAL
(joint application with NERC Institute of Terrestrial Ecology)

1.2 Address for correspondence

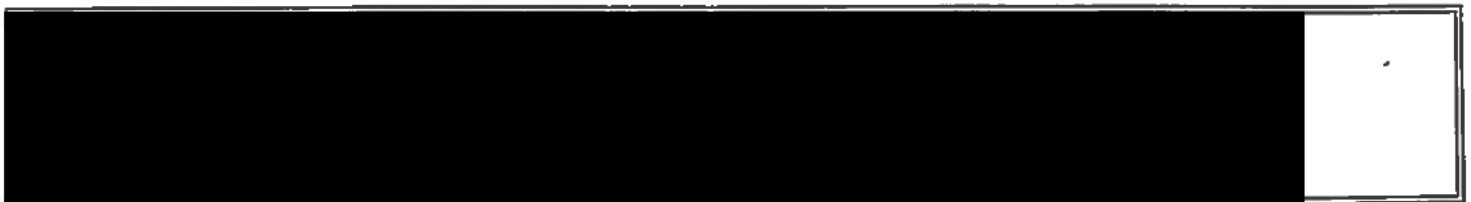
BioNET-INTERNATIONAL **NERC Institute of Terrestrial Ecology**



1.3 Person who may be contacted about this application, and position in organisation

Dr D.W. Minter, Principal Scientist (Project Leader), BioNET-INTERNATIONAL
Dr A.H. Thomas, Data Systems Manager / Mathematical Modeller, NERC Institute of Terrestrial Ecology

1.4 Telephone, FAX number and e-mail address



1.5 Nature of the organisation (eg is it an academic institution, a registered charity, company limited by guarantee?)

BioNET-INTERNATIONAL is a not-for-profit inter-governmental organization owned by the governments establishing it. At present (October 1998), 94 developing countries and 75 institutions in 25 European countries are involved in this international initiative to assist the developing world in establishing sustainable self-reliance in biosystematics.

The Institute of Terrestrial Ecology (ITE) is a component body of the Natural Environment Research Council's Centre for Ecology and Hydrology. It is partly financed by the United Kingdom government through its science budget and partly by private and public sector customers who commission or sponsor specific projects.

1.6 Describe briefly the aims, activities and structure of your organisation:

Aims:

BioNET-INTERNATIONAL is a partnership to access, build and share capabilities for identifying and characterizing economically and ecologically important organisms. It aims to assist and enable developing countries in sustainable agricultural development and conservation, and sustainable use of their environment and biodiversity, and to facilitate those interventions needed to enable these countries to achieve full implementation of the Convention on Biological Diversity.

ITE aims to develop long-term multi-disciplinary research and exploit new technology to advance terrestrial ecology.

Activities:

BioNET-INTERNATIONAL works: to strengthen biosystematic institutions in developing countries, through transfer of knowledge, skills and technology from world centres; to enhance and thereafter sustain biosystematic capabilities of developing sub-regions and regional partnerships so that corporately they satisfy biosystematic needs of member countries; to provide key institutions with mini libraries and databases, computer equipment and electronic communication systems; to train biosystematists and technicians; to rehabilitate collections and establish new resources; to develop and apply new technologies. ITE prioritizes the securing, expanding and dissemination of ecological data to further scientific research and provide the basis of impartial environmental advice to governments and industry.

Structure (enclose chart if appropriate):

BioNET-INTERNATIONAL is composed of interlinked sub-regional Locally Organized and Operated Partnerships (LOOPs) of developing country institutions (Technical Co-operation Networks), supported by a consortium of developed country expert institutions (BIOCON), and managed by the BioNET-INTERNATIONAL Consultative Group, through its Co-ordinating Committee and Technical Secretariat. Individual LOOPs are governed by their own LOOP Co-ordinating Committees.

ITE comprises six research stations in Wales, England and Scotland. It works closely with sister institutes in the Centre for Ecology and Hydrology and with other centres of excellence in the Natural Environment Research Council.

1.7 Provide brief details of the relevant past experience and achievements of the person to be responsible for the activities for which funding is sought. (This will normally be either the person completing this form or the contact at Section 1.3.)

Dr D.W. Minter: co-ordinator of current Darwin Initiative project *Fungi of the Caribbean*; winner of Royal Geographical Society's first *Ralph Brown Prize* to lead International Expedition to Pripyat Marshes of Ukraine (1998); co-ordinator of successfully completed Darwin Initiative project *Fungi of Ukraine*; co-author of resulting book *Fungi of Ukraine. A Preliminary Checklist* (1996) and several similar large recent catalogues; over 130 scientific publications; consultant for interactive bilingual CD ROM (produced jointly with Spegazzini Institute, La Plata, Argentina); medals, 1986 and 1996; much editorial experience; post-graduate teaching (Argentina, Brazil, Chile, Norway, Sweden, UK, Zimbabwe etc.); innovative work on interpretation of fungal development; innovative work with databases (especially for automated output of web-pages etc.); experience surveying fungal biodiversity in over twenty countries (Cuba, Czech Republic, Estonia, India, Poland, Russia, Ukraine, former Yugoslavia etc.); curator of databases with collectively well over 750,000 records; co-editor of the *International Mycological Directory*; keynote review *Recording and Mapping Fungi* at the British Mycological Society Centenary meeting, 1996; much experience organizing scientific conferences, workshops and field meetings and, in particular, treasurer and editor of proceedings for Ukraine's first *National Conference on Conservation & Biodiversity and Database Workshop* (October 1997); BioNET-INTERNATIONAL link scientist for Eastern Europe; many survival skills for work in former Soviet Union (FSU - in this proposal, the term excludes the Baltic states); speaks some Russian, understands more; actively learning Ukrainian; currently directing Kiev/Egham/Bangor collaboration to put distribution maps of Ukrainian fungi on the internet.

Dr A.H. Thomas: mathematical physicist; joined ITE October 1994, specializing in storage and integration of experimental data within new and existing mathematical models, with experience of a wide range of operating systems; managing and developing a local area computer network of 30 PCs, 4 servers (2 Novell + 2 UNIX) and a wide area network (Internet) connexion; designed and developed integrated *Environmental Data System* with an Oracle 7 relational database server accessed via graphical user interfaces on networked PCs (1995-1998); experience in designing systems for long term data curation and in spatial modelling particularly relevant to current project; PhD Solid State Physics (Keele, 1993); member of the Institute of Physics (1994); post-doctoral Research Fellow, Electronic Engineering Group (Keele, 1993-1994), and manager of their Magnetic Resonance Laboratory; publications include papers, book chapters and contract reports; trained professionally in presentational skills and extensive subsequent experience in introducing non-specialist staff to information technology; familiar with working in the FSU - assessor for Darwin Initiative project on *Fungi of Ukraine*, participant in Ukraine's first *National Conference for Conservation & Biodiversity*, co-leader of two-day workshop in computerized database design (Kiev, 1997), and now learning Russian; deputy leader of Royal Geographical Society's 1998 *Ralph Brown Expedition*; developing data and process characterization standards for the European Environment Agency's 1998 *State of the Environment* report (1997-1998); currently developing mapping systems for Kiev/Egham/Bangor collaboration mentioned above.

1.8 Have you received funding under the Initiative before? If so, please give details.

Dr Minter is UK co-ordinator for the CAB INTERNATIONAL Darwin Project *Fungi of the Caribbean* (Ref. 162/6/056), and was co-ordinator for the CAB INTERNATIONAL Darwin Project *Fungi of Ukraine* (Ref. 162/3/54).

1.9 How did you learn about this Initiative?

Dr Minter has worked with the Darwin Initiative now for some years. Dr Thomas has carried out project assessment for the Darwin Initiative.

1.10 Geographical coverage of the organisation as a whole.

BioNET-INTERNATIONAL: worldwide, with established LOOPS in the Caribbean, Europe, southern Africa, the South Pacific, South-East Asia, West Africa and East Africa. Further LOOPS are planned. At present (October 1998), 94 developing countries and 75 institutions in 25 European countries are involved.
ITE: many collaborative projects exist with international partners.

1.11 A brief description of the organisation's recent achievements (Please note that, while short pamphlets may be useful, the Department does not wish to receive books or lengthy reports.)

BioNET-INTERNATIONAL. The first Global Workshop was held in Cardiff from 20 to 26 August 1995, and brought together representatives from biosystematic institutes and donor agencies from 80 countries. In December 1995, just 4 months after the first Global Workshop, the BioNET FUND became a reality through the founding contribution of SF2.9 million by the Swiss Agency for Development and Cooperation. Of this sum, SF0.5 million was earmarked by the donors to support the southern Africa LOOP, and the remaining capital sum was to provide sustained funding to enable the functioning of Network Coordinating Institutes of existing BioNET-INTERNATIONAL LOOPS, and of BioNET-INTERNATIONAL's Technical Secretariat, and for a Fellowship Scheme and an Information Support Service. Through a further timely contribution of SF1 million, the same donor has provided resources specifically to enable initiation of vital operations and services in the existing LOOPS of BioNET-INTERNATIONAL. EuroLOOP was established in 1994. The southern African LOOP (SAFRINET) was officially constituted by the Southern African Development Community Council of Ministers Meeting in August 1996. A workshop was held in September 1996 to formulate the structure of the West African LOOP, and a similar workshop established the East African LOOP in October 1996. CARINET, BioNET-INTERNATIONAL's Caribbean LOOP is collaborating closely with the current Darwin Initiative project *Fungi of the Caribbean*, and the first BioNET-INTERNATIONAL fellow, Doreen Jodhan, has gone on to be Trinidadian co-ordinator for that project. Other recent activities by LOOPS include the commissioning and acquisition by SAFRINET of electronic keys and other data, and completion of needs assessment surveys by CARINET and SAFRINET, funded by DFID.

ITE. The Institute's unit in Bangor has recently developed an innovative data management system which permits environmental information to be stored and catalogued without intervention by specialist database staff. ITE has also carried out six in-depth project assessments for the Darwin Initiative.

UKRAINIAN and BRITISH SCIENTISTS explored the Pripyat Marshes of Ukraine by canoe in July and August 1998, led by Dr Minter & Dr Thomas and fully funded by the Royal Geographical Society's *Ralph Brown Expedition Prize*. Over forty participants surveyed the region's human and biological diversity, assessing the value of the marshes as an ecological corridor between the Baltic and Black Seas, evaluating sites as possible new nature reserves, and examining the area's potential for sustainable tourism. The Expedition's web-site '[//www.biodiversity.eu.inter.net/](http://www.biodiversity.eu.inter.net/)' was used as a prototype to test ideas and layout for the web-site proposed in this project.

2. PROJECT DETAILS

It is important that applicants set out precisely their objectives and the activities of their proposal. Please be as explicit as possible.

2.1 How has the need for the work been identified? How is the project related to conservation priorities in the host country(ies)? How is the project intended to assist the host country with its obligations under the Biodiversity Convention

Need identified by Dr Minter through scientific collaboration with FSU over last decade, including: Darwin Initiative project (1993-1996); 1993 Conference *Saving the FSU's Botanical Institutions* (St Petersburg; sponsor UNESCO); 1997 Conference on *Steppe Preservation* (Kamieni Mohyly; sponsor UK Know-How Fund); 1997 database workshop and Ukraine's first *National Conference on Conservation & Biodiversity* (Kiev & Kaniv; sponsor British Council); resolutions arising from and discussions with scientists at that conference; 1998 *Ralph Brown Expedition*; discussions with FSU non-governmental organizations; meetings with Ukrainian Deputy Minister for Ecological Security & Nuclear Safety, and representative of the Office of the President of Ukraine; many requests for help from many senior FSU scientists; the EuroLOOP meeting of BioNET-INTERNATIONAL.

The collapse of the Soviet Union resulted in disintegration of the old infrastructure which had co-ordinated biological programmes and information. Each new country is now reorganizing biological research, generally with reduced funding. Some old institutions have ceased to exist. Other new ones have come into being. Surviving institutions may have been relocated, or had their name changed. The names of the countries, regions, cities and streets in which they are located have also frequently changed. The result is chaos. A crisis has thus developed in FSU biological research, particularly in areas under-researched but critical for conservation and the sustainable use of biodiversity. To halt this disintegration, to set up a new infrastructure, and to handle information as that new infrastructure starts to operate, three catalytic investments are needed:

1. A directory of FSU institutions, organizations, nature reserves and their scientists (available in Cyrillic and Latin alphabets, up-to-date and readily up-dated in the future) - databases and the internet provide a natural medium for this.
2. Computers for as many as possible of the scientists identified by the directory - as will be explained, the millenium provides a remarkable and unique opportunity to realize this second investment.
3. A forum for those institutions and scientists, where future plans for FSU biodiversity work can be discussed - a meeting organized by BioNET-INTERNATIONAL, a global initiative to establish networks for scientific capacity building and institutional development in biosystematics, particularly of micro-organisms and invertebrates, can get this going.

2.2 In what ways can this project be considered a Darwin project? How does the project relate to the Darwin principles? How would the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?

Rich in biodiversity but poor in resources. This project specifically targets impoverished FSU institutions and their scientists in biodiversity hot-spots, prioritizing scientists working with neglected groups of organisms. All proposed work is additional: none is funded by other programmes.

British expertise will establish web-sites (with new machines and software provided for key FSU scientists), training key scientists in their design and maintenance. We will train FSU nature reserve staff to computerize their reserves' paper-based records, helping them produce reserve guides and pamphlets, and will assist editors of key FSU conservation magazines in ensuring articles in English are fully idiomatic.

Distinctive and innovative. Western companies are replacing computers unable to deal with dates in the next millenium. The current project exploits this wonderful opportunity: over twenty donated computers have already been accumulated; more are promised. They will be taken to nature reserves in the FSU to function as stand-alone machines with internal clocks put back, providing functional computerized data-entry systems at a fraction of the normal cost [value for money].

Elimination of poverty. Many FSU reserves are in the poorest regions. Delivery of computers to these reserves and local schools (see 2.7 para 2), with concomitant training, will help alleviate local poverty through investment and education.

Catalytic. The project will enable FSU scientists to re-establish mutual contact, and will stimulate new contacts with western scientists, using fax, e-mail and the internet, technologies unknown when Soviet directories were compiled. Donated computers will enable computerization of vast quantities of biodiversity information currently only on paper. The project will help unlock other donor monies (see 2.9 para 2).

Collaboration. We will work with many of the FSU's finest field biologists to develop National Biological Recording Centres in Ukraine and elsewhere to receive the flood of information generated by beneficiary nature reserves. Web-sites established by the project will be promoted as a venue for lively debate on, and publication of biodiversity research in the countries involved, including production of electronic distribution maps, electronic databases, checklists, illustrated descriptions and electronic journals. Work will also be published conventionally, on paper. Peer review will ensure quality and scientific excellence.

Lasting impact. This project builds on a track-record of excellent work in the FSU. The BioNET-INTERNATIONAL meeting will establish necessary infrastructures and new priorities for biodiversity research, providing the project's exit strategy.

Publicity. All outputs will be explicitly associated with the Darwin Initiative and its logo. The project's title will be *Darwin Biodiversity Information in the FSU - the Millenium Opportunity*. Web-sites established through the first of the three investments will provide access to FSU scientists working with biodiversity and conservation. Users will enter through a web-page with the Darwin Initiative logo, information about the Darwin Initiative and a hyperlink to the Darwin Initiative's home page, generating enormous awareness of the Initiative's work. The BioNET-INTERNATIONAL meeting will contain the Darwin Initiative in its title and publicity material. Press releases and other publicity measures associated with the meeting and all other aspects of this project will draw attention of the media in each country involved. The project will also be publicized through BioNET-INTERNATIONAL's worldwide literature and literature of collaborating institutions. The Darwin Initiative name and logo will be displayed on all equipment purchased or otherwise obtained as part of the project's second investment, including the Land-Rover (see 4.3), and will be included on the cover of all publications, conventional or electronic, produced from the project. In each participating institution, any room allocated to the project will be named the 'Darwin Room'.

2.3 Give the proposed starting date and duration of the project.

Propo. Start: April 1999. Proposed duration: 3 years.

2.4 Give brief details of the main objective(s) of the project.

- Improve key FSU computing and communications resources for biodiversity and conservation. Train project co-ordinators in maintenance and use of databases as tools for producing and running active web-sites, providing them with new millenium-compliant computers and software.
- Identify FSU institutions working with biodiversity and conservation. Accumulate data about them and their scientists (names, addresses, e-mail, phone, fax, needs, CVs, portraits, libraries, databases, living and dried reference collections, work on *in-situ* and *ex-situ* conservation etc.). Establish databases to deal with this information (privacy and data rights of participants will be protected). In Ukraine pilot work has been done.
- Publish accumulated information about institutions and their scientists (in idiomatic English and at least one other language, often Russian) on web-sites and as a printed directory. The web-site will be attractive, informative, pictorial, easy to use and well-supplied with appropriate hyperlinks.
- Provide practical help to these, using computers donated by western companies, transported to suitable FSU destinations, with training of recipients (some costs for workshops in computing techniques have been included in this project) and use of FSU data-entry and other software (available free, menus in Russian). Nature reserve staff tend to have quiet periods of the year. Without exception, those questioned in the FSU have indicated that they would be delighted to use these periods computerizing their records. Discussions at ministerial level in Ukraine encountered enthusiasm for the idea, which was supported in one of the resolutions of the recent *Conference on Steppe Conservation* in Kamieni Mohyly. Other FSU republics seem likely to take a similar stance.
- Strengthen/establish national biological recording centres with new computers to receive data generated by nature reserve staff; use data to output checklists, conservation strategies and other scientific work on paper and the internet.
- Gather representatives from identified institutions for a BioNET-INTERNATIONAL meeting examining future biodiversity and conservation networks. This meeting will establish one or more BioNET-INTERNATIONAL LOOPS for countries involved. For more information on this objective see section 2.9.

2.5 Set out in greater detail the proposed programme of work for which grant is sought. Include the programme's aims and measurable outputs using the attached list of measures. Give the estimated timing of the achievements.

[bold text identifies Darwin output codes] Computerized databases will be established [12A] initially in Ukraine, later in other republics, to store data about FSU biodiversity and conservation institutions, prioritizing those working with micro-organisms and invertebrates. Databases will be compatible with that used for the *International Mycological Directory* [see 1.7 above], but modified to permit Cyrillic output. Project co-ordinators will be trained to gather information relating to their republics [6A] from all new and Soviet period sources. The project will be advertized to learned societies, academies, appropriate ministries and other bodies, and on the internet, with a form for parties to complete and return. After keyboarding, a copy of each record will be returned to each party for verification and completion of missing information, then edited. Latin alphabet versions of records will be produced. All information will be checked by a UK participant. As soon as possible, an HTML copy will be put on the internet [12A], with subsequent updates. At the end of the project, a printed directory will be published [10]. A UK participant will visit different republics, to meet key people identified by the data to clarify future needs for scientific networks. Information and contacts thus established will be used to prepare the agenda and list of invited participants for a BioNET-INTERNATIONAL meeting [14A] in the FSU to discuss future scientific networks for work with micro-organisms, invertebrates and other organisms. Costings in this proposal contain an element to help delegates, but additional funding will be sought elsewhere to ensure full representation. The meeting will be held near the end of the project to ensure optimal representation of each biological group from as many republics as possible, after which resolutions will be published. An occasional newsletter will be produced [16] and scientific publications in refereed journals are expected from the project [11A] which will also be presented at scientific meetings as appropriate [14B]. Computers already accumulated, plus others promised, will be transported to the FSU. Database training workshops will be organized in different FSU countries [6A], using scientists trained through earlier Darwin Initiative projects. Although flexibility will be essential, the following general timetable will apply.

1999 - April. UK participant visits FSU to deliver first computers, establish databases and initiate data collection. June. First workshop for nature reserve staff. August. First transfer of directory data to UK. September. UK participant visits FSU to review progress. October. FSU participant visits BioNET-INTERNATIONAL for training in organizing networks and to help prepare web-site/November. Second transfer of directory records to UK. December. Web-site goes live.

2000 - April. UK participant travels to FSU to visit key FSU scientific institutions and staff. May. FSU participant visits UK to help update web-site. August. Computers placed in twenty FSU reserves by this point, and two workshops held. Potential site for Ukraine's National Biological Recording Centre identified, and establishment plans prepared. Consultation documents on similar centres prepared for at least three other republics [9]. September. UK participant visits FSU to review progress. November. FSU participant visits BioNET-INTERNATIONAL to produce first draft of directory. BioNET-INTERNATIONAL meeting organizing committee selects conference venue. December. Web-site up-dated.

2001 - March. First circular for meeting distributed. April. UK participant travels to FSU to visit key FSU scientific institutions and staff. May. FSU participant visits UK, and helps update web-site. August. Computers placed in forty FSU nature reserves by this point, and four workshops held. September. UK participant visits FSU to review progress. October. Second meeting of organizing committee. November. Second circular distributed. Printed biodiversity checklists produced.

2002 - January. Proofs of printed directory output and checked by UK participants. Production and distribution of meeting papers. February. Output and production of printed directory. March. Meeting. Dissemination of printed directory. Meeting resolutions picked up by BioNET-INTERNATIONAL. Project exit plan implemented.

2.6 Is this a new project or the continuation of an existing one?

This is a new project.

2.7 Will the project include an element of training? Please indicate how many trainees would be involved and from which countries. Would those trained then be able to train others? Where appropriate give the length of any training course. Broadly how many local people will be involved? How will trainee outcomes/destinations be monitored after the end of the training?

Four workshops/training courses, each one week long, will be held in different parts of the FSU to train forty scientists from reserves and other institutions in use of computers, data standards, and software for keyboarding. All will be local people, coming from at least four different countries of the FSU. On return they will be expected to pass skills on to their colleagues. Where possible, scientists trained through the earlier Darwin Initiative project *Fungi of Ukraine* will be involved in teaching; their ability to pass on skills has already been demonstrated successfully in the British Council funded database workshop in Kiev (October, 1997) which used computers donated by Darwin Initiative.

The project involves considerable further training in new computing skills for the FSU project co-ordinators, especially the handling of computerized relational databases and associated programming languages, and use of computerized databases for maintaining information about people and scientific institutions, and for outputting this information mechanically in a format suitable for publication on the internet and on paper. There will also be training in organization and maintenance of web-servers, and in presentation of information in HTML and other formats. Staff from at least four FSU countries will be fully trained in editorial and proof-reading skills during production of the directory. Further training will be carried out as appropriate, including assisting nature reserve staff in the production of reserve leaflets and guides. If donors provide computers surplus even to this project's requirements, every effort will be made to put them in schools in impoverished parts of the FSU, with the express intention using them to raise awareness of biodiversity and conservation questions in education.

As BioNET-INTERNATIONAL link scientist for Eastern Europe, Dr Minter is familiar with the need to maintain contact with project staff after projects end, and to involve them in other projects so that their skills can continue to develop. Dr Minter and Dr Thomas were both involved in a successful Darwin Initiative project in Ukraine. Since the end of that project, they have continued collaboration with funding and support attracted from the Royal Society, the Royal Geographical Society, the British Council, CAB INTERNATIONAL (computers, staff time), NERC (staff time), British Airways (free flights), Millets (camping equipment), Snugpak (camping equipment), PSINet (computing), mFusion (computing) and various other organizations. In this proposal great emphasis is placed on maintaining this track record through the exit plan provided by BioNET-INTERNATIONAL.

2.8 [If applicable] How is the research element of the project to be disseminated?

Through the internet (project web-sites, electronic journals, bulletin boards), conventional publications and presentations at scientific meetings. Apart from the internet and paper directory of FSU scientists working with biodiversity and conservation, scientific publications will include: new Latin alphabet checklists for fungi (Georgia and Kazakhstan), flowering plants (Ukraine), a second edition of the checklist of fungi of Ukraine, a first attempt at a meaningful red list of Ukrainian fungi. If possible, national conservation strategies for fungi, and other checklists (for example molluscs of Ukraine) will also be produced. The project will furthermore facilitate dissemination of other biodiversity research by scientists directly and indirectly involved in the project through ad hoc assistance to attend meetings, through making computers available on which papers can be written, and through selective support of appropriate publications, including key conservation magazines. The quantity of this research is potentially very large. Any research published in electronic journals or similar formats provided by this project would, of course, be subject to the same peer-group scrutiny as occurs in conventional publications.

The proceedings of Ukraine's first *National Conference on Biodiversity and Conservation* needed considerable editing from 'Runglanian' to English before they could be published. The problem is that most FSU scientists learned their English in almost total isolation from the real language, so that phrases like "elaborate the perspectives of", or "material collected in the territory of the sanatorium" are commonplace in their speech and writing. Readers encountering such a style are easily disposed to reject work as unreadable. Experienced scientists with editorial abilities, who are also native speakers of English, need to be involved in presenting all English language outputs from FSU projects. In the previous Darwin Initiative project *Fungi of Ukraine*, the rapid improvement in spoken and written English by participants exposed to native speakers was very marked. The proposers of the present project intend to improve spoken and written English of their key FSU participants throughout the work. Costings in the current proposal include an element to cover these needs.

2.9 How is the work of the project expected to continue after the end of grant period? A clear exit strategy must be included.

The exit strategy is based on BioNET-INTERNATIONAL LOOPS (see 1.6). The prime function of these LOOPS is to provide a structured environment for acquisition of funding of biodiversity and conservation research in the countries covered. The proposers anticipate that the LOOP or LOOPS created in the FSU by the BioNET-INTERNATIONAL meeting will provide an infrastructure through which not only the current work can continue, but also many other aspects of FSU biodiversity and conservation work can be progressed. The Project Leader will therefore liaise closely with the Technical Secretariat of BioNET-INTERNATIONAL to ensure that transition from the present project to one or more BioNET-INTERNATIONAL LOOPS in the FSU proceeds smoothly.

Specific aspects of the proposed work are, however, expected to be self-continuing. By the end of the current project, the FSU co-ordinators will be fully qualified and equipped to maintain the web-sites established. The proposers are aware of potential donors who are interested in digitizing data on some of the great historical collections in FSU scientific institutes, but who cannot provide the modern computers and associated infrastructure necessary to put such data on the web. The present project will provide the tools for these jobs, thus helping FSU scientists to unlock that donor money.

At the other end of the project's activities, nature reserve staff will have continued use of donated machines. As well as keyboarding each reserve's biodiversity data, these machines can be used to produce reserve leaflets and other documents. In Ukraine at least, there is intense interest in organizing sustainable tourism, and a concern among scientists to ensure that this is done sensitively, without damage to reserves. Plans are beginning to be drawn up for these developments. Having computers at key reserves will undoubtedly help develop these ideas, and ensure that control of access to reserves remains with local people.

With improved e-mail and fax links, and a higher profile through the internet, FSU collaborating institutes (and indeed all of the scientists and institutions covered by their web-sites and the new directory) will be in a much better position to compete for research monies in future. The information captured through the proposed project will be stored in a fully structured format to ensure future flexibility and no duplication of, but compatibility with existing data. The infrastructure established by the present project will enable these databases to grow naturally, allowing the possibility for other future checklists, atlases and reports, all of immense value in conservation programmes. Each participating institution will be provided with an electronic copy of the resulting data.

2.10 Which overseas institutions, if any, will be involved in the project? Please explain the responsibilities of these institutions and provide details on the individuals who will be involved in the project.

The National Ecological Centre of Ukraine, 252025 Kiev-25, PO 89/7, Ukraine (Dr L. Vakarenko). Liaison for Ukraine. Organization of data collection for Belarus, Moldova and Ukraine.

V.L. Komarov Botanical Institute, Russian Academy of Sciences, 2 Prof. Popov Street, St Petersburg, 197376, Russia (Dr V.A. Mel'nik). Liaison for Russian Federation. Organization of data collection for Russian Federation.

Institute of Botany & Phytointroduction, Kazakhstan Academy of Sciences (Dr D.I. Samgina). Liaison for Kazakhstan. Organization of data collection for Central Asia Republics.

Institute of Botany, Georgian Academy of Sciences (Dr T. Svanidze). Liaison for Georgia. Organization of data collection for Caucasus republics.

Ukraine, with the superb existing contacts developed by the previous Darwin Initiative award, makes an ideal bridgehead for taking this work into other FSU republics. Dr Minter knows the Ukrainian and Russian co-ordinators and many of their colleagues personally, and has been in contact with the other proposed FSU institutions and co-ordinators for some years.

2.11 Do you know of any other individual/organisation carrying out similar work? Give the details of the work, explaining the similarities and differences.

Before formulating the present project, the proposers have, among other activities, examined existing web-sites, interrogated societies and other NGOs and individual scientists in and outside the countries concerned, announced these plans in general terms at conferences and workshops, and discussed them with government representatives. No similar work relating specifically to biodiversity and conservation, current or planned, has come to light through these enquiries, although certain relevant web-servers and databases operating in the FSU have been identified. The proposers are furthermore aware of at least one general scientific directory compiled in the FSU since 1993, and published on paper. If an electronic form exists on the web, its location is not known. This general directory is far from complete, and its coverage and contents are very different from those proposed here. Anyone working in FSU countries for more than a short time will be aware that information flow there is frequently poor. One reason is the often chaotic environment in which people are working; another is a tradition of secrecy not likely to change quickly: similar work may therefore be contemplated, or even already under way. The proposers believe, however, that there is so much work of this nature to be undertaken in the FSU that, even if other similar activities eventually come to light, competition and duplication of effort is most unlikely; and they undertake to liaise with any other projects encountered, modifying the work intelligently to avoid competition and duplication. Within the UK, the proposers are involved in modest projects with the Royal Society for work to produce distribution maps of Ukrainian fungi on the internet (using data generated by the earlier Darwin Initiative project), and with the British Council to examine possibilities for developing of sustainable tourism within the FSU. Both of these are fully compatible with, but not duplicating the work of the present project.

3. MONITORING AND EVALUATION

Describe how progress on the project will be monitored and evaluated in terms of achieving its aims and objectives, both during the lifetime of the project and at its conclusion. How would you ensure that it achieves value for money? What arrangements will be made for disseminating results? If applicable, how will you seek the views of clients/customers?

A UK participant will visit the FSU at least twice each year to check progress, will provide regular reports to the Darwin Initiative, and will ensure that the Darwin Initiative administration is kept informed of all significant developments. Specific targets will be set for numbers of records keyboarded and other quantitative work (the target number of computerized records in the first Darwin Initiative project in Ukraine was 24,000; target numbers for the present work will be at least as great). Each record will be checked for quality at BioNET-INTERNATIONAL. Through its close contact with CAB INTERNATIONAL, BioNET-INTERNATIONAL has defined standards for all the data elements being collected, and has authority databases against which many elements of the data can be checked mechanically to ensure correct spelling of scientific names, correct use of indexing terms, viable dates and many other aspects. Scientists in the FSU will be trained as editors to proof-read each record. Records will be subject to further proof-reading at BioNET-INTERNATIONAL.

Value for money will be assessed taking into account numbers of records keyboarded and their quality measured against BioNET-INTERNATIONAL's standards. Regular monitoring of the project by BioNET-INTERNATIONAL staff will ensure that, if for political or other reasons progress is not being made or the quality of data is inadequate, financial support can be speedily withdrawn or re-allocated to a different institution following consultation with staff of the Darwin Initiative. In the first instance the results of the work will be disseminated by production in printed and electronic form in a range of mechanically compiled scientific publications. The number of visitors to each web-site will be monitored.

The project is designed to be flexible: the level of detail provided in the directory database and its coverage could be increased or decreased according to availability of funds. Problems with quality of work are not expected, as the collaborating scientists are already known to be excellent. Countries of the FSU remain chaotic and it is often difficult to work there. While every effort will be made to develop this project imaginatively and energetically, the proposers will use their considerable experience of living and working in the FSU, together with local advice, to avoid localities and situations which are potentially unsafe for British participants.

4. INCOME

4.1 What financial support from public sources (Government Department or Agency) does the organisation as a whole receive at present, and from which organisation? What percentage is this of the organisation's total income?

BioNET-INTERNATIONAL operates on a not-for-profit and fee-for-service basis.

ITE is 40% funded by the UK Government. The balance comes from contracts with various public and private bodies.

4.2 Please give details of resources you have sought from the host country partner institution(s).

A very modest estimate of the salaries and heating and lighting for nature reserve staff, for the quiet periods when they could work on keyboarding, has been included in the monies contributed by partner institutions for this project. The salaries of FSU co-ordinators for any time spent on Darwin Initiative project work beyond the 50% allocated in these estimates will be paid by their respective FSU bodies.

4.3 Please state all other sources of income and amounts to be put towards the cost of the project (including any income from other public bodies, private sponsorship, trusts, fees or trading activity). Include donations in kind eg. accommodation. Indicate any income or donations which are confirmed.

Modest estimates of the value of donated computers have been included in the costings below. BioNET-INTERNATIONAL will provide administrative assistance to the meeting organizing committee, and to the BioNET-INTERNATIONAL LOOP-establishment meeting itself. Through BioNET-INTERNATIONAL, CABI Bioscience, which is on the same Egham site, will make data, libraries and other facilities available at cost (including editing, computing expertise and preparation of camera-ready copy). While hard to quantify exactly, the value of these contributions would collectively exceed £18000. Some scientifically important reference publications will be provided free by CABI Bioscience. ITE will contribute 50% of Dr Thomas' time. Travel costs will be kept low by combining visits where possible with trips funded from other sources. Subsistence costs within the FSU will be minimized by taking advice from personal contacts. The Land-Rover acquired for the *Ralph Brown Expedition* will be made available for delivering equipment to and providing support for remote reserves in Ukraine. Local travel will be by cheap public transport wherever practical. The British Council Office in Kiev has suggested that the British Embassy in Kiev may be able to help with transporting some equipment. Assistance will be sought from airlines in transporting other equipment and books free or at reduced rates, embassies will be invited to provide free visas, the Academy of Science and other bodies in each country involved will be asked to provide extra facilities as needed freely or at nominal rates, and FSU customs officials will be asked to waive import charges on equipment. UK and local businesses will be canvassed for surplus second-hand computers, services and other equipment: over twenty computers have already been donated and are awaiting transportation.

5. EXPENDITURE

5.1 Please state gross expenditure on the programme of work (see 2.5). Please work by financial year (defined as April to March), using 1998/99 prices throughout - do not include any allowance for assumed future inflation. Indicate salary costs on Table A and total costs on Table B. For programmes of less than 3 years' duration, enter 'nil' as appropriate for future years. It would be helpful to highlight the areas for which Darwin funding is requested.

Table A

	1999/2000	2000/2001	2001/2002
Staff (list each member)			
a) UK			
Dr D.W. Minter Dr A.H. Thomas			
b) FSU collaborators funded by Darwin Initiative			
c) FSU Nature Reserve staff			
Job titles and duties			
UK Principal Scientist UK Data Systems Manager FSU Scientists - editing, keyboarding			
% of time each would spend on this project			
Principal Scientist: Data Systems Manager: FSU Scientists (x6): FSU Nature Reserve staff			
Cost of this work			

[total costs of FSU Darwin Initiative funded staff (but not accommodation, travel and subsistence) estimated at £2500 per scientist per annum; salaries of FSU Nature Reserve staff (excluding accommodation, heating and lighting) estimated at £1000 per scientist per annum]

Expenditure on other costs and then the total costs should be listed as below:

Table B

Rents, rates, heating, lighting, cleaning (to be shared between all partners)		
Postage, telephone and stationery		
Travel and subsistence		
Printing		
Conferences, seminars etc.		
Capital items (please specify) computing equipment, scientific books		
Other (please specify) Service charges, use of libraries on Egham site Use of server on Bangor site		
Sub-total		
Cost of salaries (from previous table)		
Total of spend*		

* Grants may be limited to a percentage of the total cost of the project. The Department will look for balancing income from non-public sources (eg. private sector funding, subscriptions, donations, fees).

5.2 Please deduct any confirmed income or donations from elsewhere (where this may be costed) and indicate in Table C the amount of grant requested under the Darwin Initiative.

Table C

Income to be deducted	1999/2000	2000/2001	2001/2002
BioNET-INTERNATIONAL contribution (facilities)			
BioNET-INTERNATIONAL contribution (workshop organization)			
ITE Bangor contribution (50% of salary of Dr Thomas)			
ITE Bangor contribution (use of server)			
Travel and subsistence derived from other sources			
Donated computing and other equipment			
FSU Nature Reserve staff (salaries)			
FSU Nature Reserve staff (heating and lighting etc.)			
Amount of Darwin Initiative funding requested			

6. CERTIFICATION

On behalf of the trustees/company (delete as appropriate) **BioNET-INTERNATIONAL** I apply for a grant of £ 46960 in respect of expenditure to be incurred in the financial year ending 31 March 2000 on the activities specified in paragraph 2.5.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct.

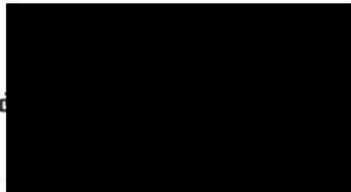
I enclose a copy of the organisation's most recent audited accounts and annual report.

[A copy of the most recent audited accounts of **BioNET-INTERNATIONAL** and a copy of the annual report is lodged with Maria Stevens, Room A504, EPINT]

Name (block capitals) **Tecwyn Jones**

Position in the organisation **Director BioNET-INTERNATIONAL**

Signed



Date **19 October 1998**

Please return completed form to the Department of the Environment, Transport and the Regions, 4/A2 Ashdown House, 123 Victoria Street, London SW1E 6DE.

Department of the Environment, Transport and the Regions

August 1998