DARWIN INITIATIVE FOR THE SURVIVAL OF SPECIES

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APPLICATION FOR GRANT

Please read the accompanying Guidance Note before completing this form. Give a full answer to each section; applications 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 except where this is invited on the form. 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 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 as additional information will not be taken into account.

1. DETAILS OF APPLICANT

1.1 Name of organisation applying

University of Oxford (Department of Zoology)

1.2 Address for correspondence

[redacted]

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

Dr Michael Packer, Zoology Research Fellow

1.4 Telephone and FAX numbers

[redacted]

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

Academic institution

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

Aims:

Teaching and research

Activities:

Structure (enclose chart if appropriate):

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 Michael Packer (who leads the Biodiversity Mapping, Monitoring and Management (BioMMM) group) has been active in biological research for the last 14 years. His interests have included the ecology and behaviour of vectors of tropical diseases, land cover and land-use change mapping, and assessment and monitoring of biodiversity, primarily in so-called developing, tropical countries. Over the last four years his research has focused on biodiversity and biological resource assessment and management. During this period Dr Packer has been using satellite remote sensing and GIS technologies, in combination with intensive field survey, to study distribution and abundance patterns of animal and plant species, assemblages and biotopes. A multi-disciplinary and applied emphasis is placed on much of Dr Packer's research, orientating it towards informing policy and practice in the conservation and sustainable utilisation of biodiversity. Dr Packer's work invariably includes environmental education/awareness and training elements, involving the development and production of appropriate materials. He has been project leader of training and research work funded by various bodies including the British Council (Tanzania), the Darwin Initiative and the NERC. This work benefits from many close and effective collaborative links with individuals, other research groups and Institutions throughout the world. Apart from numerous 'grey literature' publications (which include policy documents and management plans), Dr Packer has published over 20 peer-reviewed papers. Dr Packer is currently the Friends Provident Stewardship Joanna Lumley Research Fellow at Green College and Lecturer in Biological Sciences at St. Peter's College.

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

Yes, through a fourth-round project jointly held by Dr David Rogers and myself (University of Oxford). The project (Ref. 162/5/193) was entitled "Monitoring biodiversity of a dry savannah biome in Tanzania".

1.9 How did you learn about this Initiative?

Originally from a colleague funded by the Darwin Initiative.

1.10 Geographical coverage of the organisation as a whole.

N/A

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.)

N/A

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?

- Tanzania has a remarkable biodiversity (species richness, endemism, range of habitats) and is exceptional in that over 25% of Tanzania's land surface is contained within the protected area network. Conflicts between conservation and local development interests are intensifying, however, and the Wildlife Sector recognises the need to re-formulate protected area management policy and practice so as to take greater account of indigenous population needs.
- The project arises directly from a request by the Director of Wildlife in Tanzania to the project leader for assistance and has been designed to provide for needs identified by the Wildlife Division of the Ministry of Natural Resources and Tourism, Tanzania through activities of its Policy, Planning, Research, Statistics and Training (PPRST) Section.
- The Wildlife Division has prioritised the development of Game Reserve management plans which involve local communities, and which attempt to balance protection of biodiversity and use of resources to meet the needs of those local communities. The Division does not, however, have the resources and expertise needed for the task. The project will contribute directly to the management planning process through: the development of an integrated methodology for rapid biodiversity assessment and rural appraisal; the generation of relevant ecological and sociological information; elaboration of an objective decision support framework for choosing between alternative, relevant management options; and, building institutional capacity through provision of relevant expertise and training and of basic equipment.
- The project will have direct impact on implementation of the Convention on Biological Diversity, to which Tanzania became a Party in February 1996, through support to develop sustainable management plans for Game Reserves (Articles 6 & 10), involving biodiversity assessment and monitoring (Article 7) and training to enhance capacity of the Wildlife Division in research and planning (Article 12).

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?

- The proposed work makes an ideal, and important, Darwin project in that: it will assist the Government of Tanzania in meeting obligations under the Convention on Biological Diversity by directly contributing to the removal of some critical constraints to the development and implementation of Game Reserve protected area management plans (Articles 6 & 7; it combines aspects of all five Darwin Initiative "project areas" in an integrated and multi-disciplinary approach (relevant to Articles 10 & 12); it is an example of how scientific research can feed directly into policy and action on the conservation and sustainable utilisation of protected area biodiversity.
- The project relates closely to the Darwin objectives: it is designed to enhance capacity within Tanzania, a country that is particularly rich in biodiversity but especially poor in resources, to conserve and sustainably utilise its biodiversity; it will use UK expertise in combination with local capacity to assess the status of biodiversity/biological resources in and around protected areas as well as the local needs for/demands on these resources; it will contribute new perspectives on ways to balance the needs of biodiversity conservation and of utilisation of resources within Game Reserves; through training and input of expertise to collaborating institutions it will develop capacity to plan for and practice sustainable management of biodiversity; it will raise awareness of the conservation and utilisation value of the natural resource base of protected areas; through the integrated and multi-disciplinary approach it is likely to attract the interest of other research institutions for collaboration and donor organisations for further funding.
- The project would be advertised by the University of Oxford and collaborating institutions as a Darwin project through use of the Darwin name and logo: on a web site which is dedicated to such research activities; on all project-related stationery; on map and image products; on literature arising from the work (manuals, management plans, reports, scientific publications, and education/information materials); on donated equipment; at training workshops attended by trainees and those organised as part of the work; in press releases, popular articles and any radio or TV programmes.

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

1 April 1998 for 2 years and 3 months

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

- **Institutional capacity building and training**

The Wildlife Division lacks basic equipment and, more importantly, essential expertise for various critical activities related to developing and implementing management plans for Game Reserves. The project will provide basic equipment for field research and data analysis, and also training through: formal short courses in participatory/rapid rural appraisal and environmental impact analysis; non-formal training with the project leader, in the UK and Tanzania, in environmental impact analysis, rapid ecological assessment and management planning. Development of training materials in each of these key areas of expertise (permission will be sought to use short course materials) will enable those trained to train colleagues.

- **Research**

Given the diversity of Game Reserves (in terms of biodiversity, biological resources, local human communities) there is a need for a generic methodology for making rapid ecological and socio-economic assessments so that relevant information from a broad range of circumstances can be effectively and reliably generated. Using expertise and experience within BioMMM, research will adapt and integrate existing field and satellite remotely sensed-based methodologies for rapid biodiversity assessment and participatory/rural appraisal. Field and UK-based collaborative research in selected Game Reserves will test the generic applicability of the resulting methodology. Field and computer-based training in application of the methodology will be given to at least two mid-career personnel from the PPRST Section of the Wildlife Division.

- **Management planning**

Information generated through application of the research methodology to at least two Game Reserves (to be selected) will be analysed by the project leader and personnel from the PPRST Section, in the context of current wildlife policy and other relevant material such as feasible management options, to prepare draft management plans for these areas. (The draft plans will then be reviewed by relevant authorities according to Wildlife Policy procedures.) This process will be used to define and put in place a framework for objective decision support for the development of management plans. Training of at least two mid-career personnel in use of the framework will contribute to effective implementation for other Game Reserves.

- **Environmental awareness**

In order to achieve greater public awareness of and involvement in protection and sustainable utilisation of biodiversity the project will: initially produce materials to publicise research so that opportunities to participate in rural appraisals are clear; use research findings and the management plan devised for each reserve to develop reserve-specific environmental awareness campaigns. Production of materials for these campaigns will use the "Darwin Publishing Unit" soon to be housed at "Agenda" in Dar es Salaam by the International Centre for Conservation Education using fifth-round funds.

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 output measures. Give the estimated timing of the achievements.

Background

Tanzania has a remarkable diversity of habitats, from semi-arid savannahs to rain forest, containing large numbers of species many of which are endemic (for instance, of 10,000 plant species about 11% are endemic). About 40% of the land surface of Tanzania has some form of reserve status, just over a quarter having full protected area status. Resource demands of increasing populations have resulted in increased in-migration of pastoralists, cultivators and hunters into protected areas. The consequent intensification of conflicts over biodiversity conservation and utilisation has led to a high national priority being attributed to the development of Game Reserve management plans which balance protection of biodiversity with use of the resource base.

Project objectives

The fundamental objectives of the project are to:

- *strengthen institutional capacity for devising management plans for Game Reserves*: this is to be achieved primarily through training in policy analysis, participatory/rapid rural appraisal, environmental impact assessment, rapid ecological assessment and management planning techniques but also through provision of some basic equipment.
- *provide a protocol for devising Game Reserve management plans*: this will consist of an integrated methodology for rapid biodiversity and socio-economic assessments, and a framework for objective decision support which will enable choices between alternative, relevant management options to be made.
- *develop Game Reserve environmental awareness campaigns*: using research findings and management plans, the project will design materials for use in reserve-specific awareness campaigns focusing on use and management of protected area biodiversity.

Work programme

1998/99

Apr. - Jun.: formal training of two Wildlife Division personnel in participatory rural appraisal (PRA) (Wolverhampton University; 4 weeks); non-formal follow-up training and production of draft PRA field guide and training materials.
Jul. - Sep.: define integrated methodology for rapid biodiversity and socio-economic assessments drawing on standard methodologies for participatory rural appraisal, rapid ecological assessments and satellite-based assessments of biological resources (techniques using public domain data and developed by the project leader and colleagues in Oxford); identify candidate Game Reserves for applying methodology in consultation with Wildlife Division; request data for selected sites.
Oct. - Dec.: formal training of two Wildlife Division personnel in environmental impact assessment (EIA) (Manchester University; 4 weeks); non-formal follow-up training and production of draft EIA field guide and training materials; processing of public domain satellite data for selected Game Reserves and biodiversity assessments.

1999/2000

Jan. - Mar.: develop geographical information systems for selected Game Reserves using all data available; plan rapid field assessments including production of draft rapid ecological assessment (REA) field guide and training materials.
Apr. - Jun.: conduct rapid assessments including non-formal training in REA; discuss training materials and guides.
Jul. - Sep.: data analysis; review integrated methodology; produce final versions of PRA, EIA and REA support materials.
Oct. - Dec.: draft framework for objective decision support (integrated analysis of information, management options and policy context), including users guide; produce preliminary draft management plans for studied Game Reserves.

2000/01

Jan. - Mar.: consult with Wildlife Division about draft framework and preliminary draft management plans; also seek expert and local community critique of the plans; discuss 'model' environmental awareness materials with Wildlife Division and Darwin Publishing Unit; prepare dissemination outputs.
Apr. - Jun.: finalise framework and users guide; finalise draft management plans; complete dissemination outputs.

Measurable outputs and their timing

1. Training: short course training in participatory rural appraisal and in environmental impact assessment in the UK (Code 3, Jun. & Nov. 1998); non-formal training in rapid ecological assessment and environmental impact assessment in the UK and in Management Planning Techniques in Tanzania (Code 6A/6B, Dec. 1998 & Jun. 1999); non-formal training in rapid field assessments and in use of objective decision support framework (Code 6A/6B, Jun. 1999 & Mar. 2000).
2. Training materials and field guides for rapid ecological assessment, participatory/rapid rural appraisal and environmental impact assessment (Code 7, Dec. 1998/Jun. 1999).
3. Provision of basic equipment for participatory workshops and rapid field assessments (Code 20, Nov. 1998).
4. Geographical information systems for selected Game Reserves and surrounding areas which compile previously existing information and data generated by project research, for widespread dissemination in Tanzania (Code 12A, Mar. 1999).
5. Integrated methodology for rapid ecological assessment and rapid rural appraisal and training and users manuals as companions to field guides (Codes ?, 7 & 10, Sep. 1999).
6. Framework for objective decision support and users manual (Codes ? & 7, draft by Dec. 1999 & final by Jun. 2000).
7. Draft management plans for at least two Game Reserves (Code 9, Dec. 1999 & Jun. 2000).
8. Model environmental awareness campaign and materials (Code ?, draft by Dec. 1999 & final by Jun. 2000).
9. Dissemination outputs: at least two peer-reviewed papers (Code 11A & B, Jun. 2000); publication of outputs and raw data on a web site (Code ?12A, on-going); popular and news media articles. (? Codes 15-19, on-going and Jun. 2000).

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

- The project is new, arising directly from needs of the Wildlife Division of the Ministry of Natural Resources and Tourism, Tanzania recently defined by the Director of Wildlife.
- The project will draw on the results of previous research work conducted by various workers in and around several of Tanzania's Game Reserves as well as relevant work conducted elsewhere.

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?

- Training of Tanzanians is a central element of the project (see below). Short course and non-formal training will involve four officers from the Wildlife Division of the Ministry of Natural Resources and Tourism. The non-formal training will be given by the project leader who will also instruct the four trainees in the training of junior Wildlife Division staff.
- The Wildlife Division of the Ministry of Natural Resources and Tourism has specified training needs which will contribute to the effectiveness of its Policy, Planning, Research, Statistics and Training (PPRST) Section. These needs include participatory rural appraisal, rapid ecological assessment, environmental and social impact assessment, and protected area management planning techniques.
- Meeting these needs will be achieved through a combination of formal short courses at UK Universities (a total of 16 person weeks) together with non-formal training by the project leader in Oxford and Tanzania. The non-formal training is designed both to support and follow-up the short course work and also to cover certain needs, such as rapid ecological assessment.
- Training in each of the demand areas will involve two officers and together these personnel will be responsible for appropriate training of other personnel using materials to be designed by this project which draw directly on the course work and are suitably tailored for the purpose. This will involve the further training of at least seven Wildlife Division personnel.
- Training and development of training materials will take place early in the project and outcomes will be monitored during the course of the remainder of the project. This allows for support and follow-up training by the project leader as necessary, as well as for the clarification of process.

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

- Ecological and sociological data gathered through the research will be deposited in relevant government and non-government institutions in Tanzania: National Environment Management Council, Tanzania Natural Resources Information Centre, Institute of Resource Assessment, Conservation Information Centre of Tanzania Wildlife Conservation Monitoring.
- In addition, selected research findings will be made available on the Internet via the BioMMM homepage, which is currently being developed (http://users.ox.ac.uk/~packermj).
- The most significant research findings will be published in appropriate peer-reviewed scientific journals.
- Relevant research findings will be used in education awareness campaign materials and in the production of training materials, and field survey and management planning guidelines for use by the Wildlife Division.

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 objectives of the project are achievable during the period of funding requested.
- Application of the rapid ecological/sociological assessment methodology and the management planning protocol to protected areas in Tanzania will continue after the end of the project. The provision of basic equipment and training, with its built-in 'redundancy' (two trainees attending most training and subsequent training of others within the Wildlife Division) should serve to maintain continuity of acquired skills within the Wildlife Division.

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.

- Wildlife Division, Ministry of Natural Resources and Tourism, Dar es Salaam (Mrs M. Zacharia, Head of the Policy, Planning, Research, Statistics and Training Section; Mr Ndulege, Planning Officer; Mr M. Katalihwa, Research Officer; two other officers, yet to be named): the Division is responsible, among other things, for management of Game Reserves. Its part in the project is to provide staff to participate (at no salary cost to the project) in training for capacity building, in field research for methodology development and testing, and to co-ordinate the management planning process. Once the project is complete, Division staff will work with other collaborating institutions to apply the research methodology and planning protocol to other protected areas in order to develop management plans.
- National Herbarium, TPRI, Arusha (Dr W. Mziray, Curator; Mr E. Mboya, Botanist; Mr E. Kihumo, Entomologist; two "local collectors"/ parataxonomists): the Herbarium is currently completing the training of "local collectors" who will work in specific sites to gather botanical field data throughout Tanzania. The project will work with the collectors in devising the methodological approach to rapid ecological assessment in the selected Game Reserves.
- Conservation Information Centre, Tanzania Wildlife Conservation Monitoring, Arusha (Dr P. Viljoen, Manager): the Centre is responsible for managing available data on protected areas in Tanzania, so far focusing on National Parks. In the context of the project the Centre will be providing, if possible, existing information on candidate Game Reserves for study. The project will co-operate with the Centre to develop databases for the Game Reserve network.
- Institute of Resource Assessment, University of Dar es Salaam (Dr H. Kiwasila, Social Scientist, currently attached to University College London): the Institute has research capability in the social sciences and it will assist in designing the sampling frame/questionnaires for participatory rural appraisal.

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.

- The Wildlife Division has specifically requested the support detailed in the proposed project.
- So far as we are aware, there are no other projects similarly addressing the constraints to progress in Game Reserve management planning.

3. MONITORING AND EVALUATION

Describe how progress on the project would 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 would you seek the views of clients/customers?

- Internal monitoring through continuous appraisal by the principal collaborator (Wildlife Division) and periodic appraisal by the Head of the Department of Zoology will ensure that the project is on track. The precise needs of the Wildlife Division require that the objectives are achieved on time.
- The less frequent monitoring reports to the Darwin Initiative will be reviewed and verified by relevant Department of Zoology authorities before submission and subsequent evaluation by the appointed consultants.
- The budget is a realistic, albeit tight, initial costing of activities contributing directly to objectives. Together with the monitoring system outlined, this will ensure that value for money is achieved.
- Results of the work will be disseminated in a variety of ways. Some of these are detailed in 2.8 above. The principle formats are: peer-reviewed papers (a requirement of the Department of Zoology); training and technical manuals; information/environmental education materials; popular articles in magazines, newspaper articles; the possibility of a radio and of a television programme; projects outputs.

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 organisations? What percentage is this of the organisation's total income?

The following figures are the 1996/97 sources of income figures for the Department of Zoology (not the University of Oxford):

HEFCE	[redacted]
Research Councils	
Grants from Government bodies (e.g. DfID, Darwin Initiative)	
Total public funding	
Total 1996/97 income	

Thus [redacted] % of the Department's income in 1996/97 was from public sources.

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

No sources of income have been sought but the Wildlife Division is committed to supporting the activities of the project through provision of logistical support for fieldwork, involvement of staff in aspects of research at no cost to the project, in ensuring access through national institutions to existing data which may be useful to the aims of the project and in representing the project within Tanzania where it will assist the achievement of objectives.

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

- There are no confirmed alternative sources of income to the project. Consequently the expenditure detailed in Section 5 is that necessary to complete the work as described.
- Discussions with several other potential donors have identified possible sources of funding for specific aspects of the broader programme of work. Interest has been shown, for instance, by Friends of Conservation (funding the production of materials for the environmental awareness campaigns to be designed using Darwin funds) and the British Council in Tanzania (funding further training of Wildlife Division personnel).
- Support in kind has been requested or agreed in principle with: the Tony Fitzjohn/George Adamson African Wildlife Preservation Trust for use of light aircraft for aerial surveying (agreed); CMC Landrover for routine maintenance of the project vehicle (which would be on loan to the project for the periods of fieldwork); Neil and Liz Baker of the Tanzania Bird Atlas Project for assistance in conducting bird surveys and in training observers, and for accommodation (agreed); the TALA Research Group in the Department of Zoology for use to high-power computing facilities (agreed); the Royal Geographical Society (with the Institute of British Geographers) for the loan of field camping equipment (agreed).

5. EXPENDITURE

5.1 Please state gross expenditure on the programme of work (see 2.6). 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

	1998/1999	1999/2000	2000/2001
Number of Staff - list each member. a) UK Dr M.J. Packer Dr D.J. Rogers Dr K. Homewood b) collaborators Mr E. Mboya Local collector 1 Local collector 2 Mr E. Kihumo			
Job titles and duties Dr Packer, Project Leader Dr Rogers, Data analysis adviser Dr Homewood, Socio-economic adviser Mr Mboya, Botanist Local collector 1, Parataxonomist Local collector 2, Parataxonomist Mr Kihumo, Entomologist			

% time each would spend on this work			
Dr Packer	[redacted]		
Dr Rogers			
Dr Homewood			
Mr Mboya			
Local collector 1			
Local collector 2			
Mr Kihumo			
Cost of this work			

* NB This cost excludes an annual "cost of living award" (COLA) on the UK salary. The COLA, which will need to be paid, is made on April 1st each year and is customarily negotiated to be at or near the rate of inflation current at the time.

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

Table B

	1998/1999	1999/2000	2000/2001
Rents, rates, heating, lighting, cleaning	[redacted]		
Postage, telephone and stationery			
Travel and subsistence			
Printing			
Conferences, seminars etc.			
Capital items, (please specify) (all for the Wildlife Division) Toshiba laptop computer Iomega ZIP storage drive Over-head projector and screen			
Other (please specify) Consumables UK (software up-grades; computer media; plotter consumables) Consumables Tanzania (paper/cartridges for plotter; flip-charts and stands plus paper and pens; computer media; freight costs) Short course training (fees, travel, subsistence) Vehicle insurance, maintenance, fuel			
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 amounts of grant requested under the Darwin Initiative.

Table C

	1998/1999	1999/2000	2000/2001
Income to be deducted	[redacted]		
Amount of Darwin Initiative funding requested			

6. CERTIFICATION

On behalf of the ~~trustees/company~~ Chancellor, Masters + Scholars (delete as appropriate) ..... of Oxford ..... I apply for a grant of £ 60,191 ... in respect of expenditure to be incurred in the financial year ending 31 March 1999 on the activities specified in paragraph 2.6.

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.

[redacted]

Please return completed form to the Department of the Environment, A504 Romney House, Marsham Street, London SW1P 3PY.

Department of the Environment
September 1997