

## INVERTEBRATE TRANSLOCATION – A CODE OF CONSERVATION PRACTICE Invertebrate Link (JCCBI)

### Summary of main recommendations (see text for definitions of translocation and other terms)

- 1 Translocation should be considered only in conjunction with other conservation measures.
- 2 When attempting to maintain a population whose habitat could be damaged or destroyed by human activity, opt for translocation only as an absolute last resort.
- 3 Consult widely before deciding to attempt any translocation.
- 4 Determine a clear objective for every translocation, based on an understanding of the population structure of the species concerned.
- 5 Understand the ecology of the species to be translocated in sufficient detail.
- 6 Undertake research to establish the suitability of the proposed reception site(s).
- 7 Select the stock to be released, according to appropriate genetic and ecological criteria.
- 8 Obtain permission (in addition to any licences that may be legally required) to use both the reception site and the source of material to be translocated.
- 9 Consider carefully whether the proposed activities will harm any donor population and whether evidence of a lack of harm can be provided if required.
- 10 Ensure that appropriate long-term management of the reception site(s) is feasible and is implemented.
- 11 Include host-specific parasites in (re-)establishment.
- 12 Ensure that sufficient individuals are released to secure (re-)establishment.
- 13 Record the details of the translocation meticulously.
- 14 Ensure that the outcome of (re-)establishment or reinforcement is continually assessed and adequately recorded.
- 15 Report all translocations to the relevant repositories of records, subject to any essential need for confidentiality.

### INTRODUCTION

Plants or animals can be **translocated** in an attempt to **re-establish** them at sites of previous extinction, or to **establish** them where they have not previously been recorded. In the present code of practice, the terms used respectively to describe these two kinds of **translocation** are **reintroduction** and **novel introduction** (see also 'Definitions', below). At a site where a species is present but in decline, specimens can be released for the purpose of **reinforcement**.

Reintroduction is widely accepted as having potential value for the conservation of taxa<sup>1</sup> and of the communities with which they are associated. The value of novel introduction is less widely accepted but could be considerable in certain circumstances. In order to help ensure that either activity will have predominantly positive results, it is important for them to be adequately planned, co-ordinated, monitored, documented and undertaken using appropriate techniques. Accordingly, in 1986, Invertebrate Link (JCCBI) produced the first edition of the present code, which then referred only to the re-establishment of insects. This was published as JCCBI (1986) Insect re-establishment – a code of conservation practice, *Antenna*

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<sup>1</sup> In this context, the term 'taxa' usually refers to individual species. It may sometimes refer to sub-specific taxa.

10(1): 13–18. Since that time, new experience has been gained in some aspects of re-establishment. Also, the need to appraise the appropriateness of re-establishments has arisen in new circumstances; for example, in species recovery plans under the UK Biodiversity Action Plan. Moreover, it has become increasingly evident that climate change is affecting the distributions of species, both geographically and within microsites, and therefore has implications both for reintroduction and novel introduction in various respects.

When the first edition of this code was produced, there was little other guidance on the translocation of invertebrates. Since then, and in the light of the above developments, a number of organisations have produced relevant publications such as position statements or codes. There has, however, remained a need for up-to-date guidance, which applies to all terrestrial and freshwater invertebrates. The present code is intended to fill that need. It should be used with reference to the official policy<sup>2</sup> of the British statutory conservation agencies.

## 1 Cautionary Foreword

If a species is declining, the key requirement for its conservation is to ensure that suitable habitat exists throughout its natural range, and thus to safeguard that habitat wherever it occurs. Attempts to translocate a species to individual sites can never be a substitute for habitat conservation and should not be proposed in mitigation of proposed developments that would destroy habitats elsewhere. Such attempts can, however, form a useful part of a conservation strategy, provided that they have a clear rationale and are planned and conducted in an appropriate manner.

There are divergent views for and against translocation, which partly reflect ‘philosophical’ attitudes for or against human intervention in natural processes. In this context, an important rationale for intervention is that it is designed to mitigate a situation that is considered to be an ‘unnatural’ result of human activity. Views differ also about the probability of success (which experience shows sometimes to have been under-estimated) and about the effects that translocation could have on other species and on the genetic constitution of the populations of the subject species. Invertebrate Link believes that appraisal of proposed translocations (hitherto involving only re-establishments) has in some instances been based on a misunderstanding of the underlying principles. It urges that any proposal should be appraised thoroughly, taking into account its rationale and its ecological and genetic implications. It is therefore *recommended* that no specific proposal for invertebrate translocation be condemned or approved without full discussion and consideration.

The present code of practice is not intended to give detailed guidance on every possible scenario, but Invertebrate Link is always willing to be consulted on particular cases and to facilitate the provision of advice from appropriate individuals or organisations.

## 2 The case for translocations in the context of a changing environment

Whilst it is not the purpose of this code to advocate translocations for conservation, there is a case for considering them as a means of overcoming some of the barriers to natural dispersal that have increasingly arisen because of changing land-use over the last 50 years.

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<sup>2</sup> McLean, I. F. G. (2003) *A Policy for Conservation Translocations of Species in Britain*. Joint Nature Conservation Committee, Peterborough, UK, 34 pp.

In the past, a relatively diverse invertebrate fauna co-existed with traditional types of land-use over much of the UK. Changes in land-use, such as the intensification of agriculture and the re-development of sites previously used for housing or industry ('brownfield land') have, however, increasingly led to the degradation and destruction of habitats. Even at sites that have escaped intensification, the discontinuation of practices such as rotational grazing has led to a vegetational succession that adversely affects many of the invertebrates which previously thrived at such sites.

Owing to the above changes, considerable distances or physical barriers now often lie between sites where conditions are suitable for species with relatively exacting habitat requirements. Some of these species have very limited powers of dispersal and are therefore unlikely to move far enough to colonise sites at which conditions have become newly favourable, or to re-colonise sites after chance local extinctions. Certain sites are large enough to accommodate the internal movement of species between micro-sites, but such movement depends on a suitable form of long-term management.

Where suitable habitat exists but is too isolated to have been naturally re-colonised, there is a rationale for intervention in the form of reintroduction. This could also play a rôle in the creation of new reserves in areas where habitats have been destroyed by former land-use. Even at sites where species have persisted with changing land-use, their survival can be affected by climate change. Some sites could thereby become less suitable while perhaps others become more suitable. Where land use prevents a species from colonising sites beyond its normal dispersal distance and perhaps even beyond its former climatic range, there could be a case either for reintroduction or for novel introduction (see Clause 6.1.3).

### 3 Definitions (with relevant commentary)

In the interests of consistency with international and inter-disciplinary usage, the first four of the following definitions (in double quotation marks) are quoted from the International Union for Nature Conservation<sup>3</sup>.

- "*Reintroduction*: an attempt to re-establish a species<sup>4</sup> in an area which was once part of its historical range, but from which it has been extirpated or become extinct<sup>5</sup> ('Re-establishment' is almost synonymous, but implies that the reintroduction has been successful)."
- "*Translocation*: deliberate and mediated movement of wild individuals or populations from one part of their range to another." [In other definitions, the meaning of 'translocation' is not necessarily restricted to movement within the current geographical range of the subject species]
- "*Reinforcement/Supplementation*: addition of individuals to an existing population of conspecifics."
- "*Conservation/Benign Introductions*: an attempt to establish a species, for the purpose of conservation, outside its recorded distribution but within an

<sup>3</sup> IUCN (1998) *Guidelines for Re-Introductions*. Prepared by the IUCN/SSC Re-introduction Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK, 10pp.

<sup>4</sup> In the IUCN (1998) *Guidelines*, the term 'species' is used to denote the taxonomic unit that is to be established. In particular cases, it may be appropriate to define a lower taxonomic unit (e.g. subspecies or race).

<sup>5</sup> In the IUCN (1998) *Guidelines*, a taxon is extinct when there is no reasonable doubt that the last individual has died.

appropriate habitat and eco-geographical area. (This is a feasible conservation tool only when there is no remaining area left within a species' historic range.)"<sup>6</sup> [In the present code, the term 'novel introduction' is used.]

- *Introduction/release*: an action involving the release of a species, irrespective of whether the species has previously been present at the site concerned.
- *Biotope translocation*<sup>7</sup>: a supposed attempt to translocate an area of topsoil and vegetation, together with its inhabitant invertebrates, from a site that is to be developed. (Developers sometimes propose such action as mitigation in return for planning consent. Generally, however, this form of translocation cannot conserve the biotope in all its aspects and is therefore inherently unsatisfactory. In theory, there might be some prospect of enabling selected species to survive and reproduce at the reception site, but success is very uncertain owing to the complexity of matters such as micro-climate, soil type and hydrology. In practice, few if any such attempts have been successful in the medium to long term.)

#### 4 Aims, purposes and objectives

Invertebrate species may be translocated or otherwise released for various purposes, some of which do not involve wildlife conservation. Within the context of wildlife conservation, the principal aim of any invertebrate release should be to re-establish (or perhaps in some instances to establish) a viable population of the species or subspecies concerned. The species should be selected because it is believed to be globally extinct in the wild, or is known to have become locally extinct, or extirpated, in the area(s) into which it is to be released. Except in special circumstances, where novel introduction is to be considered, such areas should lie within the former natural range of the species and should contain suitable habitat that can viably be managed in the long term.

Outside the context of wildlife conservation, pest management and scientific research are among the more important purposes for which invertebrates are released. Pest management with the use of invertebrates may comprise biological, natural or integrated control. It could involve reinforcement within the natural range of the introduced species but more often involves novel introduction. Novel introductions are also made in scientific research, with the aim of elucidating some principle of theory or practice, but such introductions are often intentionally temporary. This code has some relevance to such activities, including the reinforcement (supplementation) of biological control agents<sup>8</sup>. With regard to the UK, attention is drawn to the provisions of the Wildlife and Countryside Act 1981 (Part 1, Section 14), which prohibit the introduction of alien species into the wild.

<sup>6</sup> In the years since the IUCN (1998) *Guidelines* were published, there has been an increasing realisation that climate change is creating a need to consider mitigating the effects of barriers that could prevent species from moving to sites that are becoming climatically more suitable than sites that they have hitherto occupied.

<sup>7</sup> The words 'biotope' and 'habitat' are sometimes used interchangeably. A biotope is a defined area characterized by specific ecological features, whereas a habitat is a space (which includes food, water and shelter) suitable for the survival and reproduction of a particular species.

<sup>8</sup> For the release of exotic biological control agents, protocols must be observed in order to avoid undesired consequences. Current protocols are set out in the Food & Agriculture Organisation's International Standards in Phytosanitary Measures [ISPM] No. 3 (2005) *Guidelines for the Export, Shipment, Import & Release of Biological Control Agents & Other Beneficial Organisms* and ISPM No. 11 (2004) *Pest Risk Analysis for Quarantine Pests, Including Analysis of Environmental Risks & Living Modified Organisms*.

The objectives of an intended invertebrate translocation could include any or all of the following:

- To re-establish a globally, nationally or regionally threatened species within a part of its natural range where it has become extinct.
- To re-establish or reinforce a globally, nationally or regionally threatened species at sites within its current natural range, so as to help maintain dispersal within a metapopulation.
- To extend the range of a species beyond its previously known range if this is the only reasonable means of mitigating the effects of loss of suitable habitat in its former or existing range.
- To maintain and/or restore natural biodiversity.
- To provide long-term economic benefits to the local and/or national economy<sup>9</sup>.
- To promote conservation awareness by selecting a species which has particular interest or value to people.

The first three of the above objectives are *species-orientated* and could be of key importance for the conservation of the species concerned. With regard to the third objective there is a particular need to consider the risk of displacing other organisms. The remaining objectives in the above list are *site-orientated*. The last of them often relates to the value of a species for human enjoyment (e.g. as an attractive butterfly) and might generally be regarded as of no direct relevance to biodiversity. There is, however, much value in promoting awareness – and hence support – of conservation, which in some instances might depend on the selection of a ‘flagship species’ for translocation.

For any proposed reintroduction, its *objectives* should be clearly formulated in detail and made freely available for examination by responsible organisations [e.g. the national statutory conservation agency and the relevant repositories of records (*see* Section 8, below, for the addresses of UK agencies.)]. The same applies regarding novel introduction, together with the additional proviso that, until such time as a detailed protocol becomes widely recognised, any proposal should be envisaged only in accordance with the criteria in Clause 6.1.3 before referral to the appropriate parties. The need for certain kinds of information to remain confidential in particularly sensitive cases is recognised.

## 5 The need for co-operation and for a multidisciplinary approach

Although it is possible for a lone individual to (re-)establish an invertebrate species, there is generally a need at least to consult – and in most cases to secure the active involvement of – a multidisciplinary range of individuals and organisations, representing a range of skills and regulatory rôles. They may include government personnel, staff of governmental conservation agencies, non-governmental organisations, funding bodies, universities, zoos and private breeders. It might also be appropriate to engage with the media, if the project is intended to generate publicity and public education. One or more persons should ensure co-ordination between the various bodies.

As noted above, a degree of confidentiality might be appropriate in certain circumstances. If so, special care should be taken in selecting the consultees

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<sup>9</sup> This benefit is likely to apply only in parts of the world where a species could have value for ‘eco-tourism’ or for commercial use; for example in ‘butterfly ranching’.

(subject to the need to ensure that all relevant views are sought) and in deciding which, if any, aspects of the project should remain confidential.

## **6 Planning and preparation**

When the aims and objectives have been decided, the project should be planned so as to take account of key factors and to take appropriate actions. The main aspects of planning are set out below.

### **6.1 Biological principles and feasibility studies**

Since the intention is to support the long-term conservation of the subject species, a key principle is that any proposed reception site should be assessed for its capacity to support a population of the species in the long term (see Clauses 6.1.4 and 6.1.6). Further principles apply, according to whether the objective is re-establishment, reinforcement or establishment at a site outside the known historical range of the species.

#### *6.1.1 Re-establishment*

Re-establishment should be considered when it would be the only reasonable means of filling a gap in the distribution of the species concerned. It may also be considered if it would help to redress a more general retraction in the distribution of the species, but not if this has evidently resulted from systematic factors that cannot realistically be overcome through the choice and management of the reception site(s) (*see* Clauses 6.1.4 and 6.1.6 for criteria to consider). In any case, it is recommended that no re-establishment be attempted unless the cause of extinction at the site is considered to be well understood and can be reversed. In this context, studies might show whether a previous local extinction probably occurred because of a chance event. If so, there will be reason to expect that re-establishment alone might suffice to overcome a lack of natural re-colonisation.

##### *6.1.1.a) Previously attempted re-establishments*

Thorough research into previously attempted re-establishment of the same or similar species and wide-ranging contacts with persons having relevant expertise should be started before the development of the re-establishment protocol begins.

#### *6.1.2 Reinforcement*

Reinforcement, as distinct from re-establishment, involves the release of individuals on to a site where the same species still occurs. It should be considered only if there are sound reasons for believing that the existing population is so small that it would otherwise become extinct. This is unlikely to be the case if the habitat and micro-climate are suitable or could become so through suitable management or predicted climate change. It is, however, possible that the population might have become so small as to have lost a viable level of genetic variation. Even if this is judged to be the case, the effects of introducing genes from another population should be very carefully assessed before any reinforcement is attempted.

#### *6.1.3 Novel introduction*

Novel introduction is defined by the IUCN (under the description of “conservation/benign introduction”), as being attempted outside the historic

range of the species concerned. As a general rule, it should be considered only as a last resort, when no opportunities for re-establishment at the original site(s) or range exist and only when a significant contribution to the conservation of the species will result. In certain cases, however, a lack of connectivity between sites might be preventing a species from naturally colonising areas where the habitat has become suitable because of improved management or climate change. Such colonisation has always been a natural mechanism for the survival of species in a changing environment. There is therefore a rationale for carefully considering novel introductions in instances where human land use would otherwise interfere with a natural shift in range.

#### 6.1.4 *Choice of release site and type*

Unless novel introduction (see Clause 6.1.3) is to be undertaken, the site(s) should be within the historic range of the species and should contain all the necessary elements of suitable, sustainable habitat and micro-climate, as determined by research (see Clause 6.1.5). If re-establishment is intended, care should be taken to establish beyond reasonable doubt that the species is absent from the site. Equal care should be taken in planning novel introduction, despite the underlying presumption that the species concerned has never been recorded at the proposed reception site(s). The kind of evidence required to demonstrate absence will vary according to the characteristics of the species. For a wide range of species, a useful criterion could be the failure to find any individuals by *searching thoroughly during five generations*.

For any translocation to have a successful outcome, the reception site(s) must be suitable for the subject species in the long term. A key question to be addressed is whether the site would be large enough. Also, the site should no longer be affected by any adverse factors that have been identified as significant in a previous extinction. Attempted re-establishment of a population at an historical site may be ill-advised or even futile if the climate has changed sufficiently so as to make the location no longer suitable or habitable by the species. Also, the site ought to have assured, long-term protection, either by legal means or by voluntary agreement.

If an intended reception site is inherently suitable but does not meet all the above conditions, options for preparing it should be identified. In such instances, the site should be chosen only if the preparatory work is feasible and can be followed by suitable management following the release (see Clause 6.1.6).

In addition to considering the suitability of the site for the subject species, there is a need to consider whether any other species might be adversely affected by the (re-)establishment or reinforcement or by any associated habitat management. Primary and secondary objectives for the management of a proposed release site should therefore always be determined. The primary objectives could include (re-)establishment, in which case other objectives could become secondary.

Before a reception site is selected, a question should be addressed as to whether objections, theoretical and practical, have been given due weight. Also, permission to remove and release specimens of any species should be obtained from the owners/occupiers of the source and reception sites and, in the case of a nature reserve, the full reserve committee and scientific committee, as well as the warden. Continuing permission will be needed if there is any expectation that repeated translocations would be required. Additionally, all legal

requirements, such as the possession of licences for work involving protected species or sites, must be observed (see Clause 6.1.8, regarding relevant laws and licensing authorities in the UK).

If only small sites are available, there may be a need to (re-)establish a species at more than one site, in order to enable dispersal within a network of colonies, any of which could thereby be naturally re-established after chance local extinctions. There is, in turn, a need to determine a suitable number and distribution of sites, by considering any natural metapopulation dynamics of the species and the geographical scale.

#### *6.1.5 Assessment of requirements for habitat management*

In many instances where a site is considered for the re-establishment of a subject species, extinction has occurred because the site is no longer completely suitable and will, if selected, need to be managed in a more favourable manner. If sites are being considered for novel introduction, it is advisable in principle to select those that are already in favourable condition and that are likely to remain so.

Autecological studies should be undertaken so as to determine the critical needs of the species. The studies should identify all key aspects of the habitat (including shelter, hibernacula and the current – and potentially changing – climate and micro-climate), intraspecific variation, adaptations to spatial and temporal variation in environmental conditions and dispersal behaviour. In many instances, studies are likely to show that vegetational succession has not been adequately controlled by appropriate habitat management. Virtually no reserve (or other site) consists of ‘climax’ vegetation, and most are changing with time in the absence of management.

The capacity of a (re-)established population to increase, perhaps to the point where food or other resources might become scarce, should be assessed. If any species have filled a void created by the previous loss of the species concerned, they should be identified, so as to help predict the effects of (re-)establishing the subject species. The rôles of parasites, predators and diseases should also be investigated.

#### *6.1.6 Preparation of the release site and post-release site management*

The ecological conditions necessary for the subject species must be identified and imposed on the site before the (re-)establishment is attempted. If those conditions depend on continuous, regular or periodic management, this should follow an agreed, detailed plan, the implementation of which can be assured. This course of action should, however, be embarked upon only if it is compatible with the primary objectives of management for the reception site (see Clause 6.1.4). Apparently incompatible objectives can often be achieved by suitable rotational management.

#### *6.1.7 Criteria for selection of release stock*

The individuals to be released should if possible be of the same subspecies or race and of the same phenological characteristics as those that were extirpated. Suitable research should be undertaken, including the analysis and archiving of molecular data where feasible and if required as part of the protocol, to investigate the genetic make-up of the extinct colonies and of the individuals to be released. Special care is needed when the population has long been extinct.

### 6.1.8 *Availability of suitable release stock and relevant legal considerations*

If the species is legally protected, the necessary licence, if any, must be obtained. For any species, an attempt at (re-)establishment must not weaken or harm the source population from which the stock is obtained. An assessment should be undertaken to establish whether this is likely to be the case. (Most colonies of invertebrates, with a high rate of intrinsic natural increase, are able to withstand the removal of a proportion of the population if their habitat is in a satisfactory condition, although the particular proportion will vary considerably between species.)

Permission to take stock for (re-)establishment elsewhere must be obtained from the owner/occupier of the source site. Also, the provisions of all relevant laws must be complied with. [In the UK, these include, *inter alia*, the Wildlife and Countryside Act, 1981, the Wildlife (Northern Ireland) Order 1985 and the Nature Conservation (Scotland) Act 2004)]. Such provisions apply to sites that are designated, for example as National Nature Reserves or Sites of Special Scientific Interest, and to species listed under relevant Schedule(s) of the above Acts. Advice can be obtained from regional officers of the appropriate statutory conservation agency (*see* Section 8, below, for addresses).

The faunal assemblage to which the subject species belongs should be considered and it should be reproduced as far as possible on the reception site. If host-specific parasites are known to play an important rôle in the population dynamics of the species concerned, or if they are rare in their own right, they should be introduced either with the source stock or within two years, depending on the colonising potential of the species. Similar action should be considered in relation to specialised predators. An exception should of course be made where the purpose of the establishment is biological control rather than species conservation.

In order to follow the guidance in Clause 6.1.7, regarding the genetic constitution of the stock to be released, the choice should be of an ecological type most similar to that formerly inhabiting the reception site. Usually this will mean a source close to the reception site but stock from a similar biotope should be preferred to a geographically closer but dissimilar biotope.

A wild source population ought not to be endangered by the removal of individuals for translocation, and it should be monitored after the removal has taken place. Consideration should be given to captive breeding of stock for later release. In this way, numbers could be increased with less damage to the source and with the use of stocks that are often available from people who breed invertebrates for a hobby. (Re-)establishment should not, however, be attempted merely because captive stocks exist, nor solely as a means of disposing of surplus stock. If a need for repeated release is anticipated, the availability of stock must be guaranteed on a regular and predictable basis, so as to meet the specifications of the project protocol.

The stage (egg, larva, pupa, imago) for release depends on circumstances; there is no generally applicable rule. The release of adults is likely to be effective if they are of a sedentary species, provided they are likely to find advantageous sites for oviposition. If the adults are more active, especially in the case of flying insects, they might leave the site before oviposition. The number of individuals to be released should be adequate (as far as can be predicted) to achieve (re-)establishment; small numbers are often ineffective. An indication of an adequate number should if possible be gained from any records of previous attempts to (re-)establish the subject species. If immature stages are used, their

numbers should be greater than would be the case with adults, the more so with earlier immature stages, so as to allow for mortality between release and reproduction.

Detailed records of the exact procedures used in the attempt at (re-)establishment should be kept as specified in Section 7. These should include the number and the life-stage(s) of the individuals released and the date(s) of release. The location(s), perhaps including geographical positioning data, should also be recorded and mapped.

## 6.2 Social and political considerations

(Re-)establishments are often long-term projects that require the commitment of long-term financial and political support.

An assessment of the attitudes of local people to the proposed project may be necessary to ensure long-term protection of the (re-)established population, especially if the species was previously present but declined owing to human factors (e.g. over-collection, or loss or alteration of habitat). Where the security of the (re-)established population is at risk from human activities, measures should be taken to minimise these in the (re-)establishment area(s). If these measures repeatedly fail, the attempt at (re-)establishment should be abandoned.

## 7 Monitoring

All populations that are being (re-)established should be frequently and regularly monitored in order to assess their status. The monitoring should continue long enough to take account of factors that might determine success or failure, such as year-to-year differences in weather. The length of the monitoring period and the details of the techniques employed should be determined according to the characteristics of the subject species. Monitoring should start before the translocation takes place and should include an assessment of the condition of the habitat and of the status of associated species. Also, it is recommended that monitoring should include the donor population (in case the removal of individuals has had any deleterious effect) and also one or more other populations, as a 'control' against which to compare the outcome of the attempted (re-)establishment. There are established protocols for monitoring most kinds of taxa; advice on the use of such protocols should be sought from the appropriate organisation(s). Invertebrate Link can facilitate contact with organisations with particular areas of expertise.

Secretive translocation attempts can confuse others and result in lost information. All attempts at (re-)establishment or reinforcement, whether successful or not, should be reported to the appropriate repositories of records. These include the relevant local Environmental or Biological Records Centre. Butterfly Conservation acts as a national repository for translocation attempts involving Lepidoptera. Other bodies agreeing to maintain records of translocation attempts will be listed alongside a copy of this Code on the Invertebrate Link (JCCBI) web-page, at the address below. Confidentiality, if required, should be discussed with the relevant repositories of records.

## 8 Useful addresses

Invertebrate Link (JCCBI), c/o The Royal Entomological Society, The Mansion House, Chiswell Green Lane, St. Albans, Hertfordshire AL2 3NS  
<http://www.royensoc.co.uk/InvLink/Index.html>

Butterfly Conservation, Manor Yard, East Lulworth, Wareham, Dorset BH20 5QP  
<http://www.butterfly-conservation.org/>

Countryside Council for Wales, Maes-y-Ffynnon, Penrhosgarnedd, Bangor,  
Gwynedd LL57 2DW  
<http://www.ccw.gov.uk/>

Natural England, 1 East Parade, Sheffield S1 2ET  
<http://www.naturalengland.org.uk/>

Northern Ireland Environment Agency, 5–33 Hill Street, Belfast BT1 2LA  
<http://www.ni-environment.gov.uk/>

Scottish Natural Heritage, Great Glen House, Leachkin Road, Inverness IV3  
8NW  
<http://www.snh.org.uk/>

This statement has been endorsed by the following Invertebrate Link (JCCBI) member organisations:

Amateur Entomologists' Society; Ancient Tree Forum; British Arachnological Society; British Dragonfly Society; British Entomological & Natural History Society; British Myriapod & Isopod Group; Buglife – The Invertebrate Conservation Trust; Butterfly Conservation; Conchological Society of Great Britain & Ireland; Countryside Council for Wales; Dipterists' Forum; Environment Agency; Field Studies Council; Freshwater Biological Association; National Trust; People's Trust for Endangered Species; Royal Entomological Society; Royal Horticultural Society; Royal Society for the Protection of Birds; Scottish Natural Heritage.