



# Multi-taxa Species Recovery

*Discussion Paper February 2022*

## Introduction

[Back from the Brink](#) (BftB) was a joint species recovery programme for England that brought together nearly 100 organisations, led by Natural England and the seven NGOs<sup>1</sup> that comprise Rethink Nature. The programme ran from April 2017 to February 2022.

Multi-taxa (or cross-taxa) species recovery is about organisations taking an integrated approach to species conservation in unison across multiple species and especially across different taxonomic groups.

Prior to the Back from the Brink (BftB) programme (2017-21), some of the partner organisations had already taken a multi-taxa approach to some extent, for example the RSPB lists priority non-bird species for potential interventions, and it was part of multi-partner, multi-taxa interventions in projects such as Cairngorms Connect and the Celtic Rainforest.

The BftB programme pursued a multi-taxa approach as one of its key 'ways of working' to take forward and trial, for the first time at such a significant project scale, through working as a collaborative partnership. The multi-taxa approach was thus very much one of the defining characteristics of the BftB programme, and represents a significant learning journey for the organisations involved.

It is important to now share the BftB experience of applying the multi-taxa approach to date, so that the nature conservation sector can learn from and develop the approach further in future – working within their own organisations, in partnerships, and with institutional funders.

## What's the goal?

A key issue that arises in the multi-taxa approach for conservationists is how we define goals. The BftB programme has investigated and advanced thinking to some extent on identifying appropriate measures of success (see References) to use for assessing species recovery. However to date the conservation sector has not really addressed how to set specific targets for multiple species at a landscape scale, beyond an overall objective to see threatened species recovering.

Ideally we need to be able to set measurable targets for species as a sector that take into account their potential synergies and conflicts. This is especially important to advance given the range of emerging policies and mechanisms, such as the new Landscape Recovery environmental land management scheme which includes an initial focus on recovering and restoring England's threatened native species.

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<sup>1</sup> Amphibian and Reptile Conservation, Bat Conservation Trust, Buglife, Bumblebee Conservation Trust, Butterfly Conservation, Plantlife and RSPB. Back from the Brink is funded by National Lottery, People's Postcode Lottery, Esmée Fairburn Foundation and several other trusts as well as the partners themselves.

## **BftB application of the multi-taxa approach**

The BftB programme has proved to be an operational showcase for multi-taxa conservation, as experimented and practised through its seven Integrated Projects (see case studies below) – of which five focussed on particular important landscapes, for example the Dorset Heaths and the Brecks of East Anglia, while two took a broad habitat focus on ancient trees and arable field margins. for multiple species – from different taxonomic groups and varied species assemblages – whose needs may sometimes conflict. Hence it was important for these BftB projects to seek to find optimal ways to manage land for a suite of different threatened species, requiring them to bring together diverse specialist organisational expertise (from BftB partners and others) and local practical knowledge inputs. The Integrated Projects covered a total of 100 BftB ‘primary’ species between them, ranging individually from 6 to 28 species as their project focus.

A further twelve BftB projects took a more conventional ‘Single Species’ focus on a further 12 BftB ‘primary’ species, to deliver highly targeted and often urgent measures in a localised area for specific threatened species. In some projects there was an informal element of multi-taxa work, for example the Grey Long-Eared Bat project of BCT collaborated with local RSPB work on Cirl Buntings.

All 19 BftB projects set recovery goals at the level of individual ‘primary’ species, mainly using an adapted Species Recovery Curve approach. This was supplemented by documenting the progress made to contribute towards the species delivery actions identified by national taxon groups in 2015. This approach extended to cover BftB ‘secondary’ species also, numbering a further 112 taxa identified to receive indirect benefits from our work for ‘primary’ species.

## **BftB Integrated Projects – Case Studies**

### **Limestones Living Legacies**

The project’s 14 target species were grouped into distinct assemblages within the focal limestone grassland habitat of the Cotswolds, according to their mapped micro-habitat preferences, which is critical to delivering the right management in the right places. Taking a multi-taxa perspective has enabled a more nuanced view of the grassland habitat and the range of micro-habitats needed. Indeed, without taking a species focus informed by expert and local knowledge, a broad-brush management approach to grazing regimes could have actually been detrimental.

A key species assemblage for which work was well-integrated involved the short turf species of Large Blues (which was reintroduced to four sites) together with Small Blues, Dingy Skipper and Juniper. The potential conflict with the assemblage requiring long swards - Duke of Burgundy, Fly Orchid, and Adder – was addressed at one large site by establishing separate grazing regimes, through creating compartments for ‘paddock grazing’.

Integrated multi-taxa landowner workshops have raised awareness of joined-up approaches to grassland management for plants, bats, bumblebees, adders, beetles and butterflies – with this approach being appreciated by site owners. Training for volunteers to carry out species surveys has broadened their interest into lesser appreciated groups of insects, notably Rugged oil beetles becoming a new local flagship species, as well as Adders too.

### **Shifting Sands**

A number of the specialist species of the Brecks inhabit similar habitats, based on particular combinations of conditions relating to openness, disturbance, and grazing levels. Targeted management works were carried out for the project's 14 focal species to restore suitable habitat to benefit multiple species.

The project particularly focussed on encouraging Rabbits - a keystone species in this landscape - to improve habitat suitability at a landscape scale. Habitat management methods to encourage Rabbit burrowing were trialled to inform future works on a larger scale. More resilient Rabbit populations will benefit plants that need open, grazed conditions (e.g. Spring Speedwell), invertebrates typically found around warrens (e.g. Lunar Yellow Underwing) and birds that need bare earth (e.g. Stone Curlew).

Substantially widened rides in Kings Forest resulted in increased recorded abundance of Basil Thyme, Five-banded Tailed Digger Wasp, and Lunar Yellow Underwing. Turf stripping to prepare ground on sites for Prostrate Perennial Knawel reintroductions also increased the abundance of Lunar Yellow Underwing. Field Wormwood plant reintroductions also involved groundworks of turf stripping, translocations, and changed management plans, resulting in numbers of the very rare Wormwood Moonshiner beetle increasing dramatically.

### **Dorset's Heathland Heart**

Creation of a diverse range of early successional bare ground heathland habitats was based upon a multi-taxa approach for the project's 19 target species. For example, one management intervention was to create dry sandy scrapes for Sand Lizards, with invertebrates such as Sand Wasps and Heath Potter Wasps also being recorded using these new features. In some cases there were unexpected multi-taxa benefits arising. Firebreaks that were cut to enable a prescribed burn, to improve habitat for Lesser Butterfly Orchid, were found to be used by Silver-studded Blue on Hartland Moor; they also led cattle down to graze in the valley mire being restored for Southern Damselflies, which immediately colonised the area.

Benefits of the multi-taxa approach also extended to outreach work, by training volunteers to carry out surveys and monitoring across a diverse range of plants, reptiles, invertebrates and birds. This has established a pool of experienced people volunteering beyond the BftB project for different conservation organisations into the future. The project also raised awareness of the multi-taxa conservation approach within the project lead organisation Plantlife.

### Gems in the Dunes

Management works for the 6 project primary species on the Sefton Coast included clearance of scrub and creation of open sand on dune slopes to benefit both Northern Dune Tiger Beetles and Sand Lizards, as well as project 'secondary' species of Grayling and Common Lizard. Creation and rejuvenation of wet dune slacks for Natterjack Toads also benefitted other species, including potentially one of the target lower plant species Petalwort, in particular around the margins by creating open, sandy damp areas. Specific smaller-scale works for Petalwort were carried out by volunteers, with some cases of it successfully reappearing as a result. Even though the overlap of distribution between the species was not as significant as initially thought, the demonstration that management actions for one species can benefit the other will be useful in future projects here.

A significant potential species conflict was between the rarer Natterjack Toad (declining locally, "Endangered" in England) and the Common Toad (widespread but declining and "Near Threatened" in England) which can out-compete it where the sand dune habitat is degraded. The project hence prioritised habitat works to improve conditions for the Natterjack Toad, whilst recognising that this would result in poorer conditions for the Common Toad locally.

### Roots of Rockingham

The project had 15 target species of Lepidoptera, bats, birds, reptiles and plants with differing habitat needs in Rockingham Forest. Ride widening was a key management intervention carried out, to create suitable more open habitat for the reintroduced Chequered Skipper as well as Grizzled and Dingy Skippers and Wood White butterflies, but also to benefit Adders and herbaceous plants and create more foraging opportunities for target bat and bird species. Monitoring of the works impacts indicate a very beneficial impact on ground flora diversity and an increase in bats activity – particularly more generalist species such as Common and Soprano Pipistrelles, although with no negative impacts yet detected on the closed canopy specialist bat species of Barbastelle.

Scalloped edges and narrowed 'pinch points' along rides were included to reduce possible negative effects on those target bat and bird species such as Spotted Flycatcher and Marsh Tit, which prefer more enclosed habitat. Habitat management work here avoided areas that were potential key roosting and foraging sites for bats, and tree veteranisation to increase roost site availability for bats may also be beneficial for birds like Lesser Spotted Woodpecker. Future rotational cutting management should ensure large areas of suitable habitat and undisturbed areas for different target species. Mulching of ride edge habitat could have potentially impacted on Adder hibernacula, so known areas were avoided and works carried out as late in the year as practically possible.

Bare ground scrapes that were created for Fly Orchid had the soil and arisings removed used to create a reptile bank nearby. Scrapes and bare ground creation to encourage Basil Thyme should benefit Dingy and Grizzled Skipper by creating early successional habitat. Landowner workshops were delivered taking a multi-taxa approach, with site managers encouraged to create a mosaic of different habitats to benefit a range of priority species.

### Ancients of the Future

The project worked across 20 key ancient tree sites in England and focussed on 28 priority species, taking a cross-taxa approach based on deadwood (saproxylic) assemblages of invertebrates, lichens, fungi and bats. Target species with similar overlapping habitat requirements included the Western wood-vase hoverfly and a lichen *Bacidia incompta* both associated with sap runs on Horse chestnuts at Moccas Park, supporting mutually beneficial management works and advice. The autecology of many rare deadwood species is still little known however, with their microhabitat needs yet to be determined.

Some of the target lichen species need mature trees in open and well-lit situations, in contrast to many threatened deadwood invertebrates. Potential species conflicts included targeted trees to be 'haloed' to provide the open conditions to mature could impact significantly upon the conditions needed by bats. Best expert opinion was called on to support management interventions for multiple species, however decades-long development of suitable habitat makes it difficult to monitor species response.

Project outputs included a cross-taxa management guide, integrated management plan advice on key sites, advisory webinars, and 'how to' videos created. The multi-taxa approach has enabled a long-term, holistic management outlook to be adopted by site owners, with more 'accessible' species groups like bats acting as a 'gateway' for both managers and the public to more obscure or less charismatic groups like invertebrates and lower plants.

### Colour in the Margins

Multi-taxa work across England for the project's 13 arable margin species, including 10 rare arable plants, was based on prioritising which species should take preference for any given field parcel, land holding, or landscape area to address conflicts between management needs. Instances of compatible taxa management included spring cultivated plots created for Cirl Bunting in Devon being an ideal habitat for Small-flowered Catchfly, and autumn cultivation management for Stone Curlews in Wiltshire being perfect for Pheasant's-eye populations. Similarly fallow plots for ground-nesting birds in Wessex provided excellent conditions for Red Hemp-nettles. Monitoring the plant populations was challenging however, as disturbance of the rare birds had to be avoided!

In contrast some species needs were in conflict, for example one of the best management options for bees such as the Shrill Carder Bee is to sow pollen and nectar strips on arable margins. However, this conflicts with the annual management required for arable plants, such as Spreading Hedge-parsley, so where these overlap spatially such as in the Mid-Somerset Hills, choices had to be made. The general advocacy of spring cultivating in Devon and Cornwall has been to the detriment of the very rare autumn germinating Broad-fruited Cornsalad, found to have just 15 recorded populations left in the UK now. Hence the project has changed the management advice to autumn cultivation at known sites, with scope for future trials at historic sites to see if deep ploughing would bring buried seed to the surface.

## Overview of the multi-taxa approach – from the BftB experience

Benefits	Limitations
<ul style="list-style-type: none"> <li>- More holistic management – using species to inform process-led habitat restoration; better understanding of species locations &amp; sites usage improves wider habitat restoration</li> <li>- Reduced conflict of competing species interests</li> <li>- Unexpected outcomes and opportunities can emerge from management/collaboration</li> <li>- A single point of contact/expertise for landowners – joined-up engagement focus, avoidance of mixed/conflicting messages</li> <li>- Wider appeal/interest to volunteers and public</li> <li>- Increased profile for ‘undervalued’ species</li> <li>- Public engagement through more ‘charismatic’ species – acting as ‘gateway’ taxa</li> <li>- Shared enhanced profile of wider programme identity</li> <li>- Opportunity for inter-organisational learning and staff and volunteer development</li> <li>- More efficient use of (shared) resources and funding; better apparent value for money*</li> <li>- Appeal of collaboration and efficiency of effort to funding bodies</li> </ul>	<ul style="list-style-type: none"> <li>- More complexity – ecological understanding, and numbers of actors to involve (incl. planning, and consultation inputs); a large amount of internal/external specialist input is required</li> <li>- Need to address species conflicts arising from differing management &amp; monitoring needs: whether to prioritise or compromise</li> <li>- Inequalities of knowledge/capacity across taxa</li> <li>- Potential dilution of effort/impact for individual species/taxa group benefits: quantity vs. quality?</li> <li>- Potential for confusion in landowners’ focus of work</li> <li>- Demanding workloads for project management by staff – greater scale/complexity of delivery and management works, plus monitoring outcomes and activity</li> <li>- Partners’ capacity limitations in staffing levels and/or geographical locations to participate</li> <li>- More time-consuming, including in the project development stage; long timescales require strong working relationships between partners</li> <li>- Greater dependency on external funding than ‘core’ species work, given scale and complexity</li> </ul>

\* BftB Integrated projects (multi-taxa), as compared with BftB Single Species projects, on average cost about half as much per species targeted and progressed (£44,200 versus £87,725) and less than half per Species Recovery Curve (whole) step of progress made (£21,200 versus £48,900).

### General Principles for multi-taxa working:

- Set clear and measurable goals at the outset of the project
- Early and open communication is needed between specialists to formulate project / management plans, based on species requirements
- Allocate time and resources from the outset to identify potential species synergies and conflicts, and make plans to coherently address species conflicts
- Pursue sustainable habitat management for multiple outcomes – seeking for species to move from being ‘conservation dependent’ on sites to ‘landscape dependent’
  
- Where there is apparent compatibility between target species that are all likely to benefit from proposed management actions – then the aim should be to pursue an integrated approach, based on evident synergies of autecology and habitat management needs for species assemblages, focussed on win-win delivery for those species with similar habitat niches. This was pursued by many BftB integrated projects, for example for short-turf butterfly species of Cotswolds limestone grassland
- Consider also the scope to increase the diversity of niches *within* (micro-) habitats where desirable, as carried out under BftB in the Dorset heaths for example; versus maintaining a narrower set of habitat conditions, if this is preferable instead for target species (often the case in pioneer habitats e.g. bare ground)

### Addressing potential conflicts in species needs

Sometimes the ecological needs of species contrast to such an extent that it becomes challenging to accommodate them in the same area through a species-led approach. This typically arises where:

- their habitat requirements are very different, for example species requiring early successional stages versus those needing later stages e.g. in the BftB Rockingham Forest project addressing the needs of Basil Thyme plants versus Barbastelle bats
- or where there is adverse interaction between the species, for example where one out-competes the other e.g. the Common Toad over Natterjack Toad in the BftB dunes project

This issue can arise more frequently when a focal area includes species that have low dispersal, low fecundity or highly specialised interactions with other species or habitat features, for example in the case of many deadwood invertebrates of the BftB ancient trees project. Conflicts that involve generalist/widespread species are typically simpler to resolve.

An advised approach to addressing species conflicts, based on BftB bodies’ experience, is to:

- Seek to obtain adequate assessments of the species interest at the site through to landscape scales, in order to be able to make decisions based on spatial evidence.
- Identify and explicitly recognise where conflicts could occur, and their scale.
- Seek ways to resolve any potential conflicts, involving advice from specialists in conservation management for the taxa concerned.
- Assign species-specific targets at a landscape scale, and then assign appropriate management objectives at smaller spatial scales, is often the way to resolve conflicts. Work at a large enough scale to enable species’ conflicting management needs to be accommodated across the landscape, as resolving conflicts becomes increasingly difficult as the scale becomes smaller!

- Set site-level objectives so that species outcomes are integrated across the landscape. This could involve two broad approaches: (a) Compromising, so that a range of species benefit, to some degree, from the intervention e.g. the BftB Rockingham Forest project opening up woodland rides, but including narrowed pinch points, or (b) Prioritising, so that some species will benefit whilst others will reduce in status e.g. favouring the rarer Natterjack Toad over the Common Toad in the BftB dunes project.
- Recognise that in some cases it may be appropriate to undertake interventions that will predictably lead to a reduction in status of some species. Beyond intrinsic species status, that might have implications for project communications with stakeholders.
- The extent to which a “Compromise” or “Prioritise” approach is taken will depend on complex considerations. This should include an assessment of how the project relates to regional and national recovery goals for the species concerned, and the conservation status and extinction risk of those species. There may be other drivers or constraints too, such as protected site objectives or land management agreements.
- Compartmentalise single sites or whole landscapes with multiple ownerships into different management regimes where species needs contrast starkly, so that the differing needs of species can be met in different spatial locations through zonation e.g. ‘paddock grazing’ parcels established on BftB Cotswolds limestone grassland sites.
- Alter the timing or methods of temporal habitat management works where this is the cause of a species conflict, for example where a particular method would result in harming species during their active period e.g. woodland ride management works in the BftB Rockingham Forest project were carried out as late in the year as practically possible to seek to avoid impacts on Adders.
- The approach to resolving conflicts should be documented, and monitoring put in place to measure the responses of species during the project, with periodic evaluation of those results against the intended outcomes.
- Project experiences should be shared widely within the sector to assist with further addressing this topic.

## Conclusions

Back from the Brink has successfully showcased effective collaborative multi-taxa conservation in practice across the projects and areas that we have worked on – enabling us to deliver better outcomes for species, landscapes and local communities.

BftB partner organisations have become more skilled in applying multi-taxa approaches, with knowledge shared beyond the BftB projects staff internally within organisations – for example Plantlife have now incorporated it into their revised project development process. Multi-taxa advice is now shared more effectively across all organisations’ landscape conservation work, including drawing upon best practice advice derived from BftB. Multi-taxa approaches can also help to engage expert bodies to deliver their ‘specialist’ role.

The BftB programme has undoubtedly strengthened collaboration between the participating partner organisations, whilst presenting many practical challenges along the way. We have developed to carry out species conservation in a different manner, and now encourage others to think differently too based upon the BftB experience and learning.

The amount of time involved in planning and adaptive management from multi-taxa working should not be underestimated, however, as well as the degree of commitment and flexibility needed between organisations for the approach to work well.

## Recommendations

### Overall:

- BftB recommends taking the multi-taxa approach as the principal model for planning and delivering species recovery, based on a non-hierarchical (taxonomically) but prioritised approach to species selection.
- There is a need however for more rigorous evaluation of the relative effectiveness and cost-benefit ratio of the multi-taxa approach – including of the BftB programme (post-hoc) for both species and people outcomes.
- Such critical assessment should also be incorporated into other species recovery programmes in both design - notably our sister initiatives of 'Species on the Edge' in Scotland and 'Natur am Byth' in Wales – and delivery, including the Species Recovery Programme of NE.
- We encourage other organisations to evaluate the costs and benefits of their experience of taking a multi-taxa approach.
- The benefits of taking a more traditional single-species approach in particular circumstances should be recognised however, including where there is an urgent need for highly targeted bespoke measures for a threatened species.
- The feasibility and value of developing a measure for multi-taxa species recovery at a landscape scale should be explored by future projects if possible, to set a target and to measure progress across a suite of species using a single measure. (An examination of possible approaches is given in section 4.4 of Pheasey & Foster 2021 – see References).
- It would also be useful to explore how well targets for habitat restoration and creation are aligned with species recovery, especially in the light of post-2020 policy frameworks for nature conservation.

### Organisational (BftB partners):

- Ensure that the multi-taxa approach is included in the work plans (where appropriate) and inductions of relevant staff of all organisations and at all levels.
- Ensure that existing staff have enough understanding of species covered by other organisations to flag matters that arise as appropriate.
- Whenever each organisation plans a new project, consider the potential implications for other taxa, and whether using a multi-taxa approach would be appropriate.

## References

- Back from the Brink (2022). Measures of Success for Species Recovery – [Discussion Paper](#).
- Pheasey, H & Foster, J (2021). Measuring Success: What Does Species Recovery Look Like? [Unpublished report](#) to the Back From The Brink programme. Amphibian and Reptile Conservation Trust, Bournemouth.