

Species name	Rationale	Zoos working with the species	Proposed by
Fen raft spider	<p>The Fen Raft Spider fostering programme in a project led by Dr Helen Smith for NaturalEngland and Sussex and Suffolk Wildlife Trusts finished 2015 after 5 years of zoos and aquariums taking an active role in the rearing and release of spiderlings to increase the populations of this endangered species across Norfolk and Suffolk through translocation techniques. The involvement of BIAZA institutions (including The Deep for the years 2012/2013) in this programme received unprecedented success, rearing over 2000 spiderlings, and resulted in no further intervention needed at this time, however populations are still being closely monitored and small scale rearing being undertaken. London Zoo have since taken in a pair for the education of their visitors and to hold a captive population. Zoos are still heavily invested in this programme and will be ready to undertake fostering roles again if needed in the coming years.</p> <p><i>Quote from Dr Helen Smith: "The contribution made by BIAZA zoos and collections, in rearing thousands of these beautiful but endangered spiders for release into the wild, was critical to the success of the project. The new Fen raft spider populations established in East Anglia since 2010 are a tribute to their expertise and enthusiasm" – Dr Helen Smith, Natural England.</i></p> <p>http://www.dolomedes.org.uk/</p>	<p>Dudley, Bristol, Beale Park, Chessington, Chester, The Deep, Lakeland Wildlife Oasis, ZSL London Zoo, Reaseheath Agricultural College and Tilgate Nature Centre.</p>	<p>The Deep, Durrell Wildlife Conservation Trust</p>
Common Crane	<p>The Great Crane Project, a partnership between WWT, RSPB and Pensthorpe Conservation Trust, with major funding from Viridor Credits Environmental Company, aimed to re-establish a sustainable population of Common Cranes in Britain. Between 2010 and 2014, the project released 94 birds on the Somerset Levels and Moors, of which around 75 are still alive and well. The released population is already successfully breeding with 4 fledglings recorded in 2015.</p>	<p>WWT's Slimbridge. Martin Mere & Washington, Pensthorpe</p>	<p>WWT Slimbridge, Durrell</p>

	<p>Phase 1 of the project involved the release of juvenile Common Cranes (approx. 20 per year for five years) between 2010 and 2014. The juvenile cranes for reintroduction were acquired as eggs collected under licence from the nests of wild birds living in an established population in Germany. The eggs were translocated to rearing facilities at WWT Slimbridge. At the rearing facilities, the eggs were hatched and the chicks hand-reared by the isolation-rearing (puppet/costume) technique. A captive collection of cranes were established at WWT Slimbridge to trial these techniques prior to the Great Crane Project starting.</p> <p>Extensive research identified the Somerset Levels and Moors as the best reintroduction location in the UK, due to the availability of existing breeding and feeding habitat, and the potential for additional habitat creation. The juvenile Common Cranes, fitted with leg-rings and satellite transmitters to facilitate post-release monitoring, were released from a purpose-built release enclosure. Captive Common Cranes in the WWT Slimbridge collection were used in the attachment technique trial to assess the effectiveness of the leg-rings and satellite transmitters.</p> <p>The project also engaged landowners, the conservation sector and general public with crane reintroduction, and encouraged its promotion as part of a sustainable rural economy in Somerset. To this end, the partners delivered a sustained programme of public engagement and PR throughout the project to highlight the potential of targeted conservation work for delivering wider wetland conservation benefits in Britain. The Great Crane Project is a 'flagship' project for the conservation and restoration of wetland landscapes and will encourage wide adoption of conservation-friendly land use.</p>		
Strapwort	Strapwort <i>Corrigiola litoralis</i> is a critically endangered plant in the UK, restricted to just one site, Slapton Ley in southwest UK.	WWCT Paignton Zoo	Paignton Zoo

	<p>We have led this species recovery programme which has consisted of research into habitat requirements of the plant followed by implementing appropriate site management and monitoring. Our horticulture dept at Paignton Zoo has propagated plants from seed from the millennium seed bank, Kew and the wild population at Slapton Ley. We used these plants to bolster the wild population over five years until they reached a sustainable level. Monitoring of plant numbers is on-going. Although the population at Slapton is healthy, the risk of extinction is high whilst the plant remains restricted to one site. In 2015, WWCT secured funding from Natural England to carry out a trial re-introduction at a former (100 yrs ago) Strapwort site in Cornwall. 1500 plants were propagated and planted on the shores of Loe Pool, a National Trust site. The plants flowered and set seed, with seedlings observed. Following this success NE had agreed to fund WWCT to carry out a 5 year re-introduction project of Strapwort to Loe Pool. This project has involved a number of partners including the Field Studies Council; Natural England and the National Trust.</p> <p>For more details see WWCT website and associated reports: http://www.wwct.org.uk/conservation-research/south-west-uk/slapton/strapwort Press story after 2015 trial reintroduction http://www.westernmorningnews.co.uk/strapwort-reintroduced-Cornish-beach-Whitley/story-26861525-detail/story.html</p>		
Hazel dormouse	<p>BCA hold a pair of this species with hopes to breed in the near future as part of the breeding programme. Young will be released to the wild as part of the programme. Wildwood breed this species for release as part of the breeding programme.</p>	<p>BCA, Paignton Zoo, ZSL, Chester</p>	<p>BCA, Paignton, Chester</p>

Over the last 100 years the endangered Hazel dormouse *Muscardinus avellanarius* has become extinct in almost half the UK counties where it used to thrive. In 1993 the hazel dormouse reintroduction programme was initiated as part of the English Nature (EN) Species Recovery Programme in response to this loss. Paignton Zoo has been actively involved in the re-introduction of dormice to 25 sites to boost local populations or put them back into counties where they had disappeared completely. Paignton Zoo breeds dormice for reintroductions and co-ordinates the captive breeding at other collections. All the dormice for release are sent to Paignton Zoo or ZSL for quarantine and health checks by our vets before they are paired up for release.

This PTES (people trust for endangered species) led project is ongoing with the successes of the reintroductions being carefully monitored. At five of these sites dormice have successfully spread throughout the woodland where they were released. At seven sites they done even better, not only dispersing throughout the wood but starting to colonise new areas. The reintroductions are part of a wider programme managed by PTES, to improve and increase suitable dormouse habitats by working with landowners across the country.

For more details see WWCT/ Paignton Zoo & PTES websites and associated reports:

<http://www.wwct.org.uk/conservation-research/south-west-uk/dormice> &

<https://ptes.org/house-a-dormouse/dormouse-reintroductions/>

	<p>https://ptes.org/get-informed/facts-figures/hazel-common-dormouse-muscardinus-avellanarius/ http://www.lbp.org.uk/downloads/Publications/SpeciesInfo/NE_EU_dormouse.pdf IUCN Red List – Least Concern UK BAP Priority Species</p> <p>Protected under Schedule 5 of the Wildlife and Countryside Act 1981, as amended, and by Schedule 2 of the Conservation (Natural Habitats &c) Regulations, 1994, making the hazel dormouse a European Protected Species.</p> <p>A number of zoos are involved in conservation work with this species – work ranges from captive breeding for reintroduction and ecological research , to habitat management on protected sites and monitoring for the National Dormouse Monitoring Scheme.</p>		
White Clawed Crayfish	<p>Bristol In 2010, the white-clawed crayfish <i>Austropotamobius pallipes</i> was reclassified by IUCN as Globally Endangered throughout its range in the UK and rest of Europe. <i>A. pallipes</i> is the UK’s only freshwater crayfish and a keystone species of our aquatic ecosystems. Bristol Zoological Society (BZS) established the South West Crayfish Partnership (SWCP) in 2008 in the response to this species global decline; in the South West alone it has experienced a 70% decline since the 1970’s when the invasive signal crayfish <i>Pascifastacus leniusculus</i>, was brought in to England to be farmed for food. The SWCP is made up of BZS, the Environment Agency, Wildlife Trusts, The Centre for Environment, Fisheries and Aquaculture Science (Cefas) and Buglife. The SWCP has four main strands:</p>	<p>Bristol Zoo, Sparsholt College, WWT Slimbridge, Paignton Zoo, London Aquarium, Aquarium of the Lakes, Cirencester College</p>	<p>Bristol Zoo, WWT Slimbridge</p>

1. Establishing ark sites (safe lentic or lotic refuges where a proportion of a threatened population can be translocated). So far 17 sites have been established for both wild caught translocations and captive bred reintroductions. Over 5000 wild crayfish from 8 highly threatened populations have been moved and over 1000 captive bred crayfish have been moved into ark sites. Bristol Zoo monitors over 50% of these ark sites annually and in 2015, set up the first captive bred research ark site in Somerset with a second captive bred research ark site due to be established in Hampshire later during 2016.

2. Education – delivering a communication strategy, educating not only zoo guests but water way users and the general public on how they can help conserve the species, tying this into Defra’s Check, Clean and Dry and Be Plant Wise initiatives. Education campaign includes not only outreach events but also setting up a flagship fishery, delivering a crayfish roadshow into schools and running themed events within the zoo.

3. Hatchery establishment at Bristol Zoo. The *A. pallipes* hatchery at Bristol Zoo was set up in 2009 and has produced over 3000 crayfish juveniles for either wild release or to be housed at other BIAZA institutions for outreach, research and to potentially establish other breeding programmes. Bristol Zoo not only brings in ovigerous wild caught females for hatching and rearing of their youngsters but also breeds both wild and captive born crayfish in captivity. Currently the focus of the hatchery is to breed and rear one of the last two known Hampshire populations to produce young to supplement the existing wild population.

4. Signal crayfish mitigation. SWCP steering members such as Cefas, have been working, for over a decade, investigating *P. leniusculus* trapping efficacy, which has relied heavily on citizen science and data collected by anglers. They have also been trialling male sterilisation in conjunction with trapping and baiting techniques in the laboratory. These techniques are now being tested in-situ. Coupled to all the strands is a strong element of research to ensure that all elements are fully documented and their efficacy validated.

WWT Slimbridge Please contact Bristol Zoo about their crayfish in crisis project. WWT Slimbridge assists Bristol Zoo by providing an outlet for their captive bred crayfish and engaging the public in their story.

	<p>The Crayfish in Crisis Project was launched in 2012, with thanks to a grant of £47,000 from Heritage Lottery Funding.</p> <p>The South West Crayfish Partnership was set up in 2008 in response to a dramatic 70 percent decline in numbers of the UK's only native crayfish species – the white-clawed crayfish (<i>Austropotamobius pallipes</i>) - in south west England. White-clawed crayfish became classified as Globally Endangered in 2010 (IUCN), and are at risk of becoming extinct from Great Britain in the next 20-30 years. Working as part of the Partnership, the Crayfish in Crisis project aims to conserve endangered native crayfish through field conservation, captive breeding, research and education.</p>		
Agile Frog	<p>Jersey Action Plan species. Head-starting wild-collected spawn for release into single traditional site and for translocation within Jersey. Between 1987 and 2014, 48,700 froglets released. Action plan</p> <p>http://www.gov.je/SiteCollectionDocuments/Environment%20and%20greener%20living/ID%20BiodiversityBookletAmphibians%20%20DM.pdf</p>	Durrell	Durrell Wildlife Conservation Trust
Cirl Bunting	<p>The Cirl Bunting is a small farmland passerine that was once widespread and common across much of southern England, but now has declined to a small area of south Devon, mostly confined to coastal farmland between Plymouth and Exeter. This is due to agricultural intensification.</p> <p>For more details see WWCT/ Paignton Zoo & RSPB websites and associated reports:As part of a large landscape scale project led by RSPB, aviculturists from Paignton Zoo hand reared chicks, taken under licence, for release into an area of Cornwall to establish a new sustainable population. Releases were carried out between 2006 and 2011 with the Cornish population currently stable and expanding naturally. http://www.wwct.org.uk/conservation-research/south-west-uk/cirl-bunting</p> <p>http://www.rspb.org.uk/community/ourwork/farming/b/farming-blog/archive/2015/02/23/cirl-bunting-success-in-the-south-west.aspx</p> <p>http://www.paigntonzoo.org.uk/explore/blog/detail/cirl-bunting-conservation-project?gclid=Cj0KEQjwoYi4BRDF_PHHu6rI7NMBEiQAKZ-JuKQxU_ME5ixL438-Fuhj0ROqTBSHfbuPeQSnBi0TkbcAajG38P8HAQ</p>	Paignton, ZSL	Durrell Wildlife Conservation Trust, Paignton
European Beaver	<p>http://www.rzss.org.uk/conservation/our-projects/project-search/field-work/our-work-with-beavers/ details the reintroduction project and the external partners we work with.</p>	RZSS	RZSS HWP

<p>Water Vole</p>	<p>The UK water vole population decreased dramatically in the last half of the 20th century. The much loved rodent, characterised as Ratty in Wind in the Willows, population dropped to a minute proportion and had become locally extinct in some areas of the country. Its decline broadly reflects issues threatening UK wetlands. Wetland loss, rivers concreted into culverts and canals no longer provides food or shelter for the burrowing herbivore and the invasive species, American mink providing a top predator that the water vole had not experience previously.</p> <p>Water voles are thriving at the following WWT sites, WWT Llanelli, WWT Martin Mere, WWT Slimbridge and WWT Welney. At WWT Arundel and WWT London, WWT introduced new populations to give them a kick start and they have been incredibly successful. WWT Arundel is widely recognised as being possibly the best place in the country to get a glimpse of a water vole.</p> <p>In order to carefully manage the ditches on our reserves for the water voles, we have enlisted the support of the Internal Drainage Boards – the public bodies responsible for maintaining the ditch systems in wetter parts of the UK. Their help in sensitively clearing ditches combined with our planting and management has reaped some great results. At WWT Slimbridge, the amount of ditches used by water voles went up from just 250m to over 15 kilometres in just four years!</p> <p>The sheer number of voles living on some of our reserves gives us and others great opportunity to study their behaviour and ecology. Studies at WWT Arundel, looking into the genetic links between populations is starting to reveal how water voles might repopulate the countryside one day.</p>	<p>WWT Slimbridge, NFWP, Wildwood Trust</p>	<p>WWT Slimbridge</p>
<p>Red Billed Chough</p>	<p>Extinct in Jersey. Release of captive-bred red-billed chough into Jersey where species absent for 100 years. First wild-hatched chick in 2015 and 21 birds in wild flock by March 2016. Project website www.birdsontheedge.org</p>	<p>Durrell (also Paradise Park - non-BIAZA)</p>	<p>Durrell Wildlife Conservation Trust</p>