REVISED PLAN JUNE 2019

CANALS

1. INTRODUCTION

Birmingham & Fazeley Canal © Steven Falk

For the purpose of this action plan the canal habitat includes the open water, associated channels, sluices, side ponds, marginal vegetation, embankments, grassland, woodland, hedgerow, scrub and built features such as bridges. Generally this will include all the land within the ownership of Canal & River Trust (CRT). Canals provide the public with access to the wetland habitat which is more difficult to reach on lakes and rivers, giving them the opportunity to appreciate its wildlife.

At the turn of the 18th century, with the increasing industrialisation of Britain, an extensive canal system linking towns, cities, quarries and other industrial areas was created. With the decline of industrial use many of these narrow canal corridors have become important spaces for wildlife as they often pass through intensive farmland or heavily urbanised settings with little open space. Canal land is often less intensively managed than the surrounding land and can form species-rich habitats for wildlife, providing "green corridors" into urban areas with a mixture of terrestrial and wetland habitats. The canal bank opposite to the towpath, known as the off-side, is commonly in different ownership to the canal itself, which can pose problems for management.

Canals can vary greatly with the amount of boat traffic presence, with the potential to support highly diverse and notable animal assemblages along the better stretches. They are good foraging areas for bats with the canal-side buildings, bridges and tunnels providing roosting and breeding sites. Amphibians and reptiles using this habitat may be grass-snake (*Natrix Helvetica)*, common toad (*Bufo bufo)* and common newt *(Lissotriton vulgaris)* Occasionally, areas can be suitable for frog (*Rana temporaria*) and great crested newt *(Triturus cristatus*) that prefer to breed in areas away from the presence of fish. Invertebrates may include white-clawed crayfish (*Austropotamobius pallipes)* and many scarce and declining insects. Wetland, grassland or arable habitats are frequently inter-related with the towpath, hedge or other boundary features where soft banks and fringing vegetation contribute shelter for kingfisher (*Alcedo atthis*), water vole (*Arvicola terrestris)* and otter (*Lutra lutra).*

The greatest variety of plant species in found in canals with relatively clear undisturbed water, usually where there is deeper water or lighter boat traffic; on heavily used canals the turbid water caused by boat traffic results in a generally poor submerged aquatic flora. The still water of canals hosts several distinct plant communities:

- submerged and floating-leaved aquatics such as amphibious bistort (*Persicaria amphibia*), arrowhead (*Sagittaria sagittifolia*) and occasionally yellow water-lily (*Nuphar lutea*), and in some regions the scarce UK priority species grass-wrack pond-weed (*Potamogeton compressus*).
- free-floating aquatics such as common duckweed (*Lemna minor*).

- emergent and marginal aquatics such branched bur-reed (*Sparganium erectum*) arrowhead (Sagittaria sagittifolia); reed canary-grass (*Phalaris arundinacea),* bulrush (*Typha latifolia*)*,* gipsywort (*Lycopus europaeus*) and purple loosestrife (*Lythrum salicaria*). Reed sweet-grass (*Glyceria maxima)* is one of the commonest marginal species.

Built structures such as bridges, buildings, walls, and locks can support a specialised wall flora including lichens, liverworts and mosses. Where canals are set within cuttings or upon raised embankments, they can become even more substantial features, with much subsidiary grassland and scrub (e.g. Nettle Hill near Ansty and the Tunnel, near Fenny Compton). Canal bridges provide important roosting places for bats, particularly Daubenton's (*Myotis daubentonii*), the presence of which is considered an indicator of the health of a canal as they rely on a large supply of insects.

A greater diversity of species occur in canals with some boating, while abandoned canals quickly become overgrown and lost by aggressive dominant species, or dry up. Side pounds beside locks can often be sheltered from boat movement and contain species such as Flowering Rush (*Butomus umbellatus)* and various species *of Potamogeton,* including *P.compressus* and *P.pectinatus.* On old canal arms and abandoned canals, the open areas of standing water, which persisted during the early stages of succession and were ideal for many types of wildlife, deteriorate as the canals become completely overgrown with scrub, making the shallow, stagnant interior virtually sterile from lack of light and oxygen. In the final stage of dereliction, canals may become completely dried out and the wetland flora and fauna disappears.

The contribution that canals make to biodiversity has not been fully appreciated in the past, stemming from both a lack of systematic survey and a commonly held belief that they were generally too polluted to sustain wildlife. However, the aesthetic appeal of canals, their wildlife and heritage make them popular with walkers, anglers and boat users and they are increasingly the focus of the leisure industry and much new waterside development and regeneration. These many competing demands and the repair needs of the historic waterway structures need to be managed sensitively to accommodate the needs of local wildlife as well as canal users**.**

Until 2012 the management and maintenance of 2,200 miles (3,541 km) of canals, rivers and docks within the United Kingdom, including the buildings, structures and landscapes alongside those waterways, was carried out by British Waterways, a statutory corporation wholly owned by the government. On 2 July 2012 all of British Waterways' assets including bridges and reservoirs, and responsibilities in England and Wales were transferred to the newly founded charity the Canal & River Trust (CRT) but with the wider remit of identifying wildlife as a key part of canals' wider appeal and , along with access, as important areas on which to focus.

2.	OBJECTIVES	TARGETS
Associated Action Plans are: *'Built Environment', 'Bats', 'Great Crested Newt', 'White-clawed Crayfish' and 'Water Vole'*		
PLEASE CONSULT THE '***GENERIC HABITATS'*** ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL HABITAT PLANS		
A.	**Enhance the wildlife value of the habitats immediately associated with canals.**	**Ongoing**
B.	**Maximise linkages to adjacent habitats to ensure connectivity.**	**Ongoing**

3. NATIONAL BAP OBJECTIVES AND TARGETS

Although there is no national Biodiversity Action Plan (BAP) for canals, British Waterways produced their own BAP in 2006 which is being updated by CRT as its 'Natural Asset Management Strategy'. One of its objectives is to produce a Warwickshire List of Indicator Species, derived from the UK Biodiversity Indicators, 2018**.**

4. CURRENT STATUS

There are seven navigable canals within the county of Warwickshire: The Grand Union, Oxford and Coventry Canals, which link together to form the 'Warwickshire Ring' a popular cruising route, and the Ashby, Birmingham & Fazeley and Stratford Upon Avon Canals.

None of the canals in the county are Sites of Special Scientific Interest (SSSIs) although they are considered to enhance those SSSIs adjacent to the canals such as Stockton Railway Cutting and Quarry, Calcutt Locks Meadow , River Blythe, Clowes Wood and New Fallings Coppice, Alvecote Pools and Shrewley Canal Cutting (a geological SSSI) .

The section of Coventry Canal through Coventry is the first designated canal Local Wildlife Site (LWS). However, all canals are designated as ecosites and many are of substantive value and selected as potential Local Wildlife Sites (pLWSs). The mapping and recording of the Coventry Canal through Nuneaton and Bedworth and the Grand Union Canal through Solihull has been completed.

The Water Framework Directive (WFD) is leading on the demand for improvements to water quality both biological and chemically. There have already been significant improvements over the last decade, represented in the wide diversity of fish now present in the canals and the return of the otter to many sections of canals. There are still many challenges, especially from agrochemical, industrial and road surface runoff, and from air quality degradation from road traffic and industrial pollution entering the hydrological cycle.

4.1 Legal and Policy Status

A wide range of species and habitats are protected under international and domestic laws, including the Wild Birds Directive (1979), the Wildlife and Countryside Act (1981), the Conservation Regulations(1994) and EC Habitats Directive (1992). Protection of sites is

afforded nationally through SSSI, Special Areas of Conservation (SAC) and Local Nature Reserve (LNR) statutory status. Other sites are offered recognition of their value through Local Wildlife Site status (LWS), Local Character Areas and identified Landscape Scale Areas. The National Planning Policy Framework (2012) chapter/section 11 states conditions with regard to any development negatively affecting biodiversity, including protected sites, ancient woodland and other irreplaceable habitats (paragraph 118). The Wildlife & Countryside Act and schedule 2 of the Conservation of Habitats & Species Regulations 2010 make it an offence to intentionally kill, injure, take, possess, sell, buy or transport a range of species.

CRT has statutory environmental duties under the British Waterways Act 1995. Section 22 of the Act dictates that CRT has 'to take into account any effect, which their proposals would have on the beauty or amenity of any rural or urban area or on any such flora, fauna, features, buildings, sites or objects'. The protection of species under the Habitats Directive, the Wildlife & Countryside Act and Conservation Regulations are adhered to. Other Acts relating to various regulations are also upheld by British Waterways.

The monitoring of all watercourses by the Environment Agency (EA) has to meet the WFD legislation which crucially includes ecological measures such as fish and macrophytes. Under WFD, if a watercourse fails to meet appropriate standards for any one measure, it is classified as failing; canals are a special case as they are intrinsically heavily modified waterways.

4.2 Current Factors Affecting the Habitat

- **Pollution** leading to poor water quality and a reduction in biodiversity. Eutrophication is the most serious problem, caused by air pollution, the run-off of fertilizers from agricultural land and the occasional overflow of sewage from storm water drains and ditches. The run off of pesticides in rural areas, diffuse runoff from roads in built up areas and the discharge of inappropriate chemicals from boats are additional problems.. In some more industrial areas there has been historic contamination of the sediments with heavy metals and hydrocarbons reducing water quality if disturbed.
- **Invasive plant and animal species** affecting natural communities (although the extent is unknown 2014):
  - Marginal plants**,** e.g. Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*);
  - Plants of open-water such as Canadian pondweed (*Elodea canadensis*), New Zealand pygmyweed (*Crassula helmsii*), marsh pennywort (*Hydrocotyle tripartita*) and the alga *Cladophora glomerata;*
  - Non-native crayfish species, killer shrimp (*Dikerogammarus villosus),* demon shrimp (*D. haemobaphes)* and zebra mussel (*Dreissena polymorpha);*
  - North American mink *(Mustela vison).*
- **Recreational and development pressures:**
  - The inappropriate development of waterside locations that fail to maintain or enhance the ecological corridor or protect water quality from surface runoff and misconnected discharges.

  - Demand for more recreational use with towpaths being used for walking, angling and cycling, whilst the improvement and widening of surfaces affects the adjoining habitats, e.g. loss of permanent grassland.
  - Incidents of vandalism and litter.
  - Increased boat traffic has the potential for adverse effects on the quality of the immediate environment, e.g. noise, increased turbidity of the water, erosion of the soft banks through wave action, physical disturbance to submerged vegetation and marginal communities.
- **Unsympathetic management of habitats** along the canal corridor, e.g. formalised landscaping in places and frequent mowing along towpaths; if excessive, this can expose wildlife such as water voles to predators and there is a need to balance the needs of water voles with access requirements and use of towpaths. Ideally frequent mowing should only be done alongside hard structures. The canal bank opposite to the towpath may suffer impacts from agricultural or residential use of the canalside land, resulting in erosion, excessive nutrient inputs, non-native species and loss of riparian habitat. There is a need for a 5m buffer zone to reduce runoff of soil.
- **Restoration of bridges that does not take account of wildlife -** e.g. bats roosting in them, the presence of lichens.
- **Hard engineered bank protection –** the installation of sheet and steel piling eliminates the growth of marginal vegetation and jeopardises water vole populations by reducing the amount of habitat available for possible expansion of existing colonies.
- **Effect of hot weather/impact of climate change** on fish / invertebrates in view of the low oxygen levels associated with the slow flow.
- **Sedimentation as a result of run-off from roads and arable land -** necessitating dredging operations to arrest habitat succession although these can potentially cause disturbance of benthic organisms (e.g. crayfish and swan mussels (*Anodonta cygnea*).

5. LOCAL ACTION

- An accurate digitised database of standing water in the sub-region has been established by the Habitat Biodiversity Audit (HBA) and is annually updated.
- **Canal & River Trust (CRT)** aims to make canals an environmental asset with good ecological potential:
  - CRT strategy and promotional material has a 'wellbeing' focus, aiming to encourage people to use their local wild spaces. It is working with Butterfly Conservation Warwickshire (BCW) in areas of deprivation, with a 5 year focus on Coventry. Environmental awareness material is available on the website, aimed at boaters and other canal users, offering advice on how to reduce the possible detrimental impact upon the environment by their actions.
  - **Environmental Code of Practice Appraisals** are carried out for all programmed work. These identify habitat and species in the area of work

that may be affected by the proposal and any remedial action required to prevent damage to the habitat or species and actually enhance the area.

- the **Natural Asset Management Strategy** (in preparation including a Warwickshire Indicator Species list) will highlight the various species and habitats that may be located along the canal corridor and issues guidelines to protect and enhance these environments.
- **corridor studies** have been completed for a few sections of canal in North Warwickshire which have identified potential areas for habitat schemes. More generally, wildlife surveys have been carried out for many more sections, usually of the banks, especially of the priority species and groups: otter, water vole, bats and white-clawed crayfish. Sampling of sites is carried out before any work is begun for the presence of plants and invertebrates.
- **monitoring of invasive non-native species** and management to reduce them is carried out, including the eradication of pennywort from canals. Continues the EA's (Check Clean Dry Campaign).
- a **Biodiversity Action Plan** is planned for the canals of the West Midlands, recording all habitats and species that need protection. An annual survey of bats at Olton Reservoir, Earlswood Lakes (where they are regularly seen) and Hatton (occasionally seen) will be one of the targets. An overall objective will be to increase biodiversity by 10% by 2025 to enhance the priority habitats: hedges, grassland, reed fringe, open water and woodland.
- a **bio-environment training** day was held in 2016, workshops for water shrew in 2016 and for otter and water vole in 2018; also monthly species training courses are held for engineers.
- **water plans** are in place, with mowing specifications; where water voles occur or could expand to, the most appropriate mowing specification is chosen for biodiversity, that leaves cover along the water's edge, whilst still maintaining a safe and welcoming towpath for people.
- to improve **water quality,** CRT is working with the EA to the Water Framework Directive (WFD) on the Coventry Canal by 2021,dredging of silt took place in 2018-9 with the marking of all discharge points.
- to facilitate **water vole dispersal**, the connection of existing wetland corridors through the creation and enhancement of offside habitats has been increased, using coir rolls on the Coventry and North Stratford canals where the bank is hard-piled.

- **Management to improve canal habitats** has also been carried out by:
  - BCW:
    - Wharf Meadows in Bedworth, Marston Lane and Park have been linked to the Coventry Canal at the Marston Junction.
    - between 2009 and 2012, Sustrans (main partner) and CRT worked together in the SITA Trust funded project Bringing Back the Small Blue', to enhance the Grand Union Canal at Long Itchington to open up the embankments and restore grasslands for wildlife.

- at Fenny Compton Tunnels has carried out scrub clearance for butterflies.

- Living Environment Trust: a charity involved in the maintenance and restoration of the 5.5m stretch of the Coventry Canal delivers educational packages, e.g. litter picks and habitat improvement.

- **Water quality monitoring** is carried out and recorded through the Waterside Care scheme: at Olton Reservoir (Grand Union Canal) and by the Earlswood Wildlife Partnership at Earlswood Lakes (Stratford Canal).
- There is increased knowledge and use of a variety **of soft bank protection** methods and these ideas need to be shared amongst CRT and the EA. A management trial for soft bank repair on the Stratford Canal out by British Waterways began in 2004. Soft-bank protection has been installed by Warwickshire Wildlife Trust (WWT) on the Birmingham & Fazeley Canal in the Tame Valley using vegetative fibre and native plants to create more natural bank side habitats in 2008.
- Coventry City Council Park Service Rangers maintain an art trail and two pocket parks along the Coventry Canal.

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6. PROPOSED LOCAL ACTIONS

ACTION	Lead	Partners	By
PLEASE CONSULT THE ***'GENERIC HABITATS'*** ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR ACTIONS COMMON TO ALL HABITAT PLANS			
Policy, Legislation & Protection			
PL1. Continue to select all qualifying canals / sites as LWSs and enter onto database, targeting Coventry Canal, Grand Union Canal at Solihull and Birmingham & Fazeley Canal in the Tame Valley.	LWSP	NE HBA LAs TAMP LPAs CRT	2015 onwards
PL2. Ensure that the protection of all LWS designated canals and adjacent areas are included in Local Development Plans, Neighbourhood Plans and any other relevant strategies.	WCC	NE WWT LPAs NWBC NBBC	ongoing
PL3. Ensure that new minor or major developments aim for net biodiversity gain through adherence to the mitigation hierarchy.	WCC	NE WWT LPAs NWBC NBBC	ongoing
PL4. Continue to implement statutory water objectives for canals through community engagement.	CRT	EA	ongoing
Site/ Species Safeguard & Management			
SM1. Maintain favourable ecological condition of all	CRT	NE CRT	ongoing

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canals and adjacent habitats by ensuring the appropriate management of all sites.		WWT WBRC LAs	
SM2. Initiate programmes of positive management to improve canal habitats, particularly in urban areas.	CRT	LOs WWT WBRC BCW	2020
SM3. Create additional habitat wherever there are suitable opportunities, e.g. on CRT-owned land adjacent to canals especially the off-side bank, taking into account the needs of associated priority species/groups: otter, water vole, white- clawed crayfish and bats**.**	CRT	EA WWT WBRC WBG	2020
SM4. Implement the national requirement for Sustainable Urban Drainage Schemes (SUDS) in all new housing schemes of more than 10 dwellings as well as commercial and industrial developments, using the opportunity to create new habitats**.**	WCC	NE EA WWT LAs	ongoing
SM5. Ensure biodiversity is protected and enhanced during all activities including restoration and management (**see RM4**).	CRT	NE EA LAs WCC WWT BCW S'trans	ongoing
SM6. Improve and maintain canal water quality in line with WFD.	CRT	NE WWT WCC LAs	2020
Advisory			
A1. Signpost information on water habitat, boating and fishery issues.	CRT	WCC WWT LAs	ongoing
Research & Monitoring			
RM1. Carry out surveys, using the Natural Asset Management Strategy, to identify key habitats and species on the canal systems, identifying the most important stretches, initially targeting the Birmingham & Fazeley Canal in the Tame Valley, and Coventry Canal, Nuneaton (see **PL1**).	CRT	HBA TAMP WBRC	2020
RM2. Where found on the canal systems, monitor otter, water vole, white-clawed crayfish and bats and review data every 5 years.	CRT	EA WWT HBA WBRC WBG	ongoing
RM3. Assess connectivity of canals with adjacent wetland habitats, to identify key landscape areas to	LWSP	HBA CRT WWT LOs	2017

ACTION	Lead	Partners	By
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improve **(see SM2).**			
RM4. Produce Environmental Appraisals and Environmental Impact Assessments for all maintenance work and proposed developments.	CRT	NE EA LAs	ongoing
RM5. Continue trials and research into soft bank protection and 'dressing up piling'.	CRT	WWT EA STW LAs	ongoing
RM6. Record and monitor invasive non-native species and identify hotspot areas and produce targeted control programmes. Species include: Himalayan balsam, Japanese knotweed, marsh pennywort, giant hogweed, non-native crayfish and killer and demon shrimps.	CRT	NE EA LAs	2018
RM7. Monitor the water quality of canals and publish information produced.	EA	CRT LAs	ongoing
RM8. Research water quality at locations where there is a potential or known impact on wildlife, e.g. Earlswood Lakes, in partnership with EA and landowners.	CRT	EA LOs EWP	2018
Communication & Publicity			
CP1. Provide suitable training for operatives and volunteers to ensure the maintenance and enhancement of biodiversity, in association with bioengineering companies.	CRT	WWT BCW LAs CGs	ongoing
CP2. Hold workshops and events on canal management , protected species, for the public.	CRT	WWT BC LAs CGs WCG CCC	ongoing
CP3. Include information on the wildlife of canals on existing heritage information boards to enhance the awareness and enjoyment of anglers and other canal users.	CRT	WWT	ongoing

Abbreviations: **ACs** – Angling clubs, **BCW** – Butterfly Conservation Warwickshire, **CGs** - Community Groups, **CCC** – Coventry City Council, **CRT** – Canal & Rivers Trust, **CTs** – Canal Trusts, , **EA** - Environment Agency, **EWP –** Earlswood Wildlife Partnership**, HBA –** Habitat Biodiversity Audit partnership, L**As –** Local Authorities, **LOs –** Landowners**, LPAs –** Local Planning Authorities, **LWSP** – Local Wildlife Sites Project, **NBBC** – Nuneaton & Bedworth Borough Council, **NE** – Natural England, **NWBC** – North Warwickshire Borough Council, **SRT** – Severn Rivers Trust, **STW** Severn Trent Water, **S'trans** – Sustrans, **TAMP –** Tame Anker Mease Catchment Partnership**, TRT** – Trent Rivers Trust, **WAP –** Warwickshire Avon Catchment Partnership, **WBG** – Warwickshire Bat Group, **WBRC** – Warwickshire Biological Record Centre, **WCC** – Warwickshire County Council, **WCG –** Waterside Care Group**, WWT** – Warwickshire Wildlife Trust.

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Progress with this plan up to 2018 can be seen at http://www.warwickshirewildlifetrust.org.uk/LBAP.

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9. FURTHER INFORMATION

Biodiversity Planning Toolkit - a new online resource to help incorporate biodiversity and geodiversity into the planning system and new development.

Buglife - the Invertebrate Conservation Trust (2004) – provides information on the habitat-management requirements of key invertebrates. CD-Rom available.

Plantlife - a charity which carries out plant species and habitat conservation, owns and manages nature reserves, campaigns, and raises awareness through education.

Environment Agency (2015) - the Plant Tracker app helps combat the spread of the UK's most problematic invasive, non-native plant species. It shows how to identify and record the location of 14 invasive plant species with a "Confusion Species" gallery for each one, to help separate similar looking plants.

10. CONTACT

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