National Water Vole Database and Mapping Project

PART 2: PROJECT MAPS for period 2009 – 2018

Catherine McGuire, Hampshire & Isle of Wight Wildlife Trust and Ali Morse, Royal Society of Wildlife Trusts

November 2020





Protecting wildlife for the future

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	GUIDE TO THE USE OF THE DISTRIBUTION AND ALERT MAPS	1
3.	GB WATER VOLE DISTRIBUTION MAPS	7
4.	GB AMERICAN MINK DISTRIBUTION MAPS	14
5.	WATER VOLE ALERT & KEY AREA MAPS	21
	5.1 SOUTH WEST RIVER BASIN DISTRICT	22
	5.2 SOUTH EAST RIVER BASIN DISTRICT	25
	5.3 WALES	28
	5.4 SEVERN RIVER BASIN DISTRICT	31
	5.5 THAMES RIVER BASIN DISTRICT	34
	5.6 ANGLIAN RIVER BASIN DISTRICT	37
	5.7 DEE RIVER BASIN DISTRICT	40
	5.8 NORTH WEST RIVER BASIN DISTRICT	43
	5.9 HUMBER RIVER BASIN DISTRICT	46
	5.10 SOLWAY TWEED RIVER BASIN DISTRICT	49
	5.11 NORTHUMBRIA RIVER BASIN DISTRICT	52
	5.12 SCOTLAND	55
	5.13 GREAT BRITAIN WATER VOLE REGIONAL KEY AREAS MAP	58
6.	HISTORIC DATA WATER VOLE ALERT MAPS	59
7.	WATER VOLE REINTRODUCTIONS	72
8.	REGIONAL KEY AREAS: CHANGE OVER TIME	74
9.	ACKNOWLEDGEMENTS	76
10). PUBLICATION DETAILS	76

1. INTRODUCTION

This document is Part 2 of the National Water Vole Database & Mapping Project 2009-2018 and comprises the Guide to Using the Distribution and Alert Maps, followed by the maps themselves.

This document and maps should be read in conjunction with Part 1 of the National Water Vole Database & Mapping Project 2009-2018.

2. GUIDE TO THE USE OF THE DISTRIBUTION AND ALERT MAPS

The following tables explain the uses and limitations of the project maps:

- Table 1: GB Water vole distribution maps: quick guide
- Table 2: UK American Mink distribution maps: quick guide
- Table 3: Water vole alert maps: quick guide
- Table 4: Water vole local key area maps: quick guide
- Table 5: Water vole regional key area maps: quick guide

Table 1: GB Water vole distribution maps: quick guide

Error! Reference source not found.					
Map title	Page	Resolution	Display format	Uses	Caution
GB- Water vole presence all records (1861-2018)	8	Derived from records ≥ 100m resolution	Dots	For: -providing overview of distribution across UK since records began -helping to plan further survey/ research at national level.	Does not: -purport to capture all areas historically or currently occupied by water voles (to an extent reflects recorder effort) -indicate abundance -show status over time.
GB- Water vole presence all records (1861-2018)	9	Derived from records ≥ 1km resolution	10km squares	For: -providing overview of distribution across UK since records began -reporting against UK BAP targets -helping to plan further survey/ research at national level.	Does not: -purport to capture all areas historically or currently occupied by water voles (to an extent reflects recorder effort) -indicate abundance -show status over time.
GB- Water vole presence (2009-2018)	10	Derived from records ≥ 100m resolution	Dots	For: -providing overview of distribution across UK over the last 5 years -helping to plan further survey/ research at national level.	Does not: -purport to capture all areas historically or currently occupied by water voles (to an extent reflects recorder effort) -indicate abundance -show status over time.
GB - Water vole presence (2009-2018)	11	Derived from records ≥ 1km resolution	10km squares	For: -providing overview of distribution across UK over the last 5 years -reporting against UK BAP targets -helping to plan further survey/ research at national level.	Does not: -purport to capture all areas historically or currently occupied by water voles (to an extent reflects recorder effort) -indicate abundance -show status over time.
GB - Water vole absence all records (1977-2018)	12	Derived from records	Dots	For: -indicating where absence recorded during survey.	Does not: -indicate areas where water voles have been absent historically or are currently
GB - Water vole absence (2009-2018)	13	≥ 100m resolution		duning Sulvey.	absent.

Error! Reference source not found.						
Map title	Page	Resolution	Display format	Uses	Caution	
GB - American mink presence all records (1952-2017)	15	Derived from records ≥ 100m	Dots	For: -providing overview of distribution across UK since records began	Does not: -separate mink survey records from mink trapping records. Mink 'presence' may in	
GB - American mink presence all records (1952- 2017)	16	Derived from records ≥ 1km resolution	10km squares	-helping to plan further survey / research at national level.	some cases represent an animal that has been 'removed' from the population.	
GB - American mink presence (2009-2018)	17	Derived from records ≥ 100m	Dots	For: -providing overview of distribution across UK over the last five years	Does not: -separate mink survey records from mink trapping records. Mink 'presence' may in some cases represent an animal that has been 'removed' from the population.	
GB - American mink presence (2009-2018)	18	Derived from records ≥ 1km resolution	10km squares	-helping to plan further survey/ research at national level		
GB - American mink absence all years (1978-2018)	19	Derived from records ≥ 100m	Dots	For: - indicating where absence recorded during survey.	Does not: - indicate areas where mink have been absent historically or are currently	
GB - American mink absence (2009-2018)	20	Derived from records ≥ 100m	Dots		absent.	

Table 2: GB American Mink distribution maps: quick guide

Table 3: Water vole alert maps: quick guide

Water Vole Alert Maps				
Map title	Page	Data displayed	Uses	Caution
South West RBD Water Vole Alert Map	22	Derived from records ≥ 100m	Derived from records ≥ 100m resolution with buffers added. For: -identifying at least some of the potentially suitable habitat within water vole dispersal distance of populations recorded over the last five years -alerting users to potential presence of water voles -assisting with the collation of data for agri-environment schemes -alerting organisations that undertake regular maintenance tasks to the potential presence of water voles -planning future water vole survey and monitoring.	designation -provide a precise boundary defining presence/absence of water voles and/or their habitat e.g. the 0.5km wide buffer along occupied watercourses will not always capture the extent of adjacent suitable habitat. -identify other potentially suitable habitat into which populations may move in the future -remove the need to consider other mapping/imagery to assess habitat suitability -remove the need to undertake new surveys prior to determining development/engineering/habitat
South East RBD Water Vole Alert Map	25			
Wales Water Vole Alert Map	28			
Severn RBD Water Vole Alert Map	31			
Thames RBD Water Vole Alert Map	34			
Anglian RBD Water Vole Alert Map	37	water voles -planning future		
Dee RBD Water Vole Alert Map	40			
North West RBD Water Vole Alert Map	43			
Humber RBD Water Vole Alert Map	46			
Solway Tweed RBD Water Vole Alert Map	49			
Northumbria RBD Water Vole Alert Map	52			
Scotland Water Vole Alert Map	55			

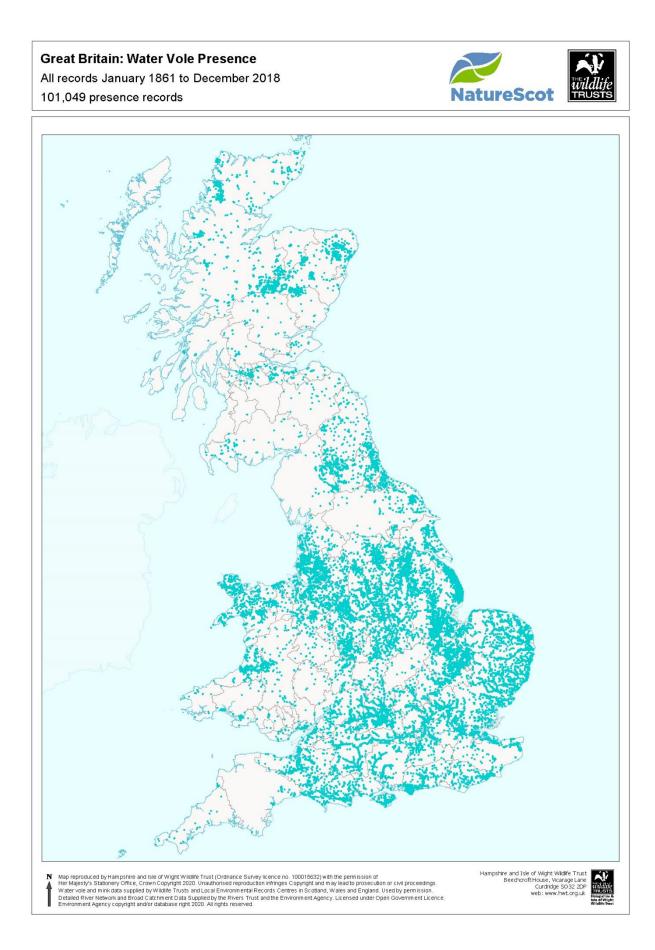
 Table 4: Water vole local key area maps: quick guide

Water Vole Local Key Area Maps				
Map title	Page	Data displayed	Uses	Caution
Water Vole Local Key Areas: South West RBD	23	Alert areas over 6km^2 derived fromFor: - indicating areas $\geq 6 \text{ km}$ records $\geq 100 \text{m}$ resolution with buffers addedFor: - indicating areas $\geq 6 \text{ km}$ likely populations/clusters populations that have a chance of persisting long	- indicating areas $\geq 6 \text{ km}^2$ that are	These maps do not: -confer any statutory or non statutory designation -provide a precise boundary defining presence/absence of water voles and/or their habitat (as outlined in Table 5) -identify other potentially suitable habitat into which populations may move in the future -remove the need to consider other mapping/imagery to assess habitat suitability -remove the need to undertake new surveys prior
Water Vole Local Key Areas: South East RBD	26		populations/clusters of populations that have a greater chance of persisting long term -encouraging protection and/or sensitive management of potentially suitable habitat within	
Water Vole Local Key Areas: Wales	29			
Water Vole Local Key Areas: Severn RBD	32			
Water Vole Local Key Areas: Thames RBD	35	voles recorded in the last ten years -assisting with designation of local wildlife sites -targeting survey and monitoring efforts -targeting habitat enhancement and creation works -targeting mink control efforts -targeting with the development of agri environment scheme applications	to determining development/engineering/habitat works. Sub populations can disappear from sites and/or re appear from one survey season to the	
Water Vole Local Key Areas: Anglian RBD	38		-targeting survey and monitoring efforts -targeting habitat enhancement and creation works	next. Populations may move in response to small changes in habitat quality. -show smaller populations, which may decline due to stochastic events. -highlight small colonies or small clusters, which
Water Vole Local Key Areas: Dee RBD	41			
Water Vole Local Key Areas: North West	44		are highly unlikely to persist without positiv intervention. In some areas these sma	
Water Vole Local Key Areas: Humber RBD	47			colonies may be essential in aiding recovery of populations and may also regarded as locally important.
Water Vole Local Key Areas: Solway Tweed RBD	50			
Water Vole Local Key Areas: Northumbria RBD	53			
Water Vole Local Key Areas: Scotland	56			

Table 5: Water vole regional key area maps: quick guide

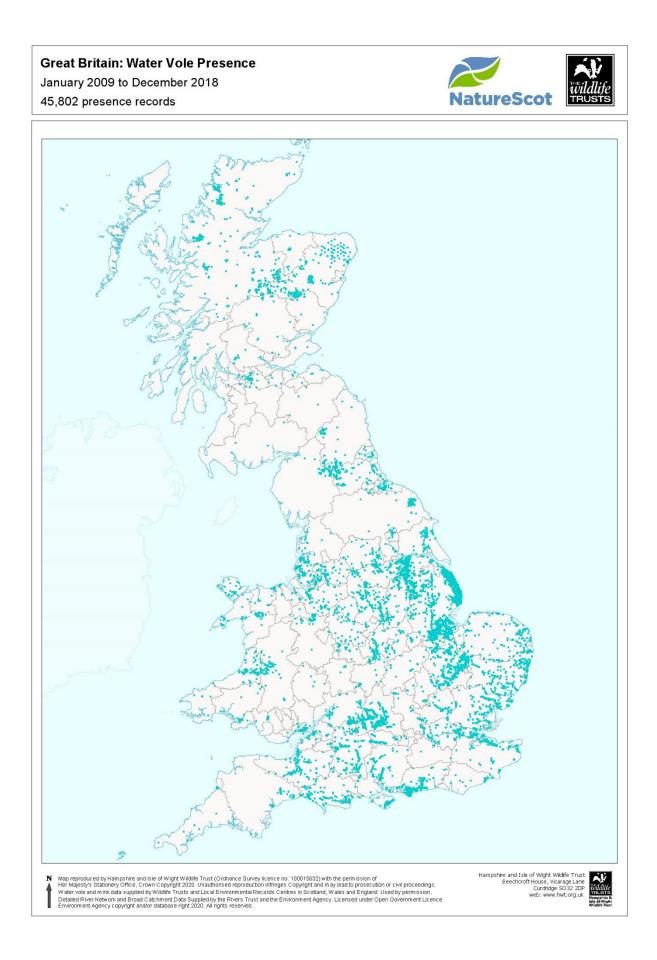
Water Vole Regional Key Area Maps				
Map title	Page	Data displayed	Uses	Caution
Water Vole Regional Key Areas: South West RBD	24	Alert areas over 35km ² derived from	For: -indicating areas \geq 35 km ² where	These maps do not: -confer any statutory or non statutory designation
Water Vole Regional Key Areas: South East RBD	27	with buffers added prioritising long term strategic policy initiatives	-provide a precise boundary defining the presence or absence of water voles and/or their habitat (as outlined in Table 5)	
Water Vole Regional Key Areas: Wales	30		-prioritising long term strategic policy initiatives	 -identify other potentially suitable habitat into which populations may move in the future -remove the need to consider other mapping/imagery to assess habitat suitability -remove the need to undertake new surveys prior to determining development/engineering/habitat works -show smaller populations, which may decline due to stochastic events, -highlight small colonies or small clusters, which are highly unlikely to persist without positive intervention. <i>In some areas these small colonies may be essential in aiding recovery of populations. They may represent all or most of the remaining populations in the area and may also be regarded as regionally important.</i>
Water Vole Regional Key Areas: Severn RBD	33		-facilitating collaborative working -prioritising resource allocation -targeting mink control efforts at	
Water Vole Regional Key Areas: Thames RBD	36	regional -assistin - statutor -targetin	regional level -assisting with designation of statutory and non-statutory sites -targeting survey and monitoring efforts at regional level -targeting habitat works at regional level -encouraging protection and/or sensitive management of potentially suitable habitat within	
Water Vole Regional Key Areas: Anglian RBD	39			
Water Vole Regional Key Areas: Dee RBD	42			
Water Vole Regional Key Areas: North West	45			
Water Vole Regional Key Areas: Humber RBD	48			
Water Vole Regional Key Areas: Solway Tweed RBD	51			
Water Vole Regional Key Areas: Northumbria RBD	54			
Water Vole Regional Key Areas: Scotland	57			
Great Britain Water Vole Regional Key Areas	58	Derived from records \geq 100m with buffers added.	Strategic overview of water vole regional key areas.	Cautions as above.

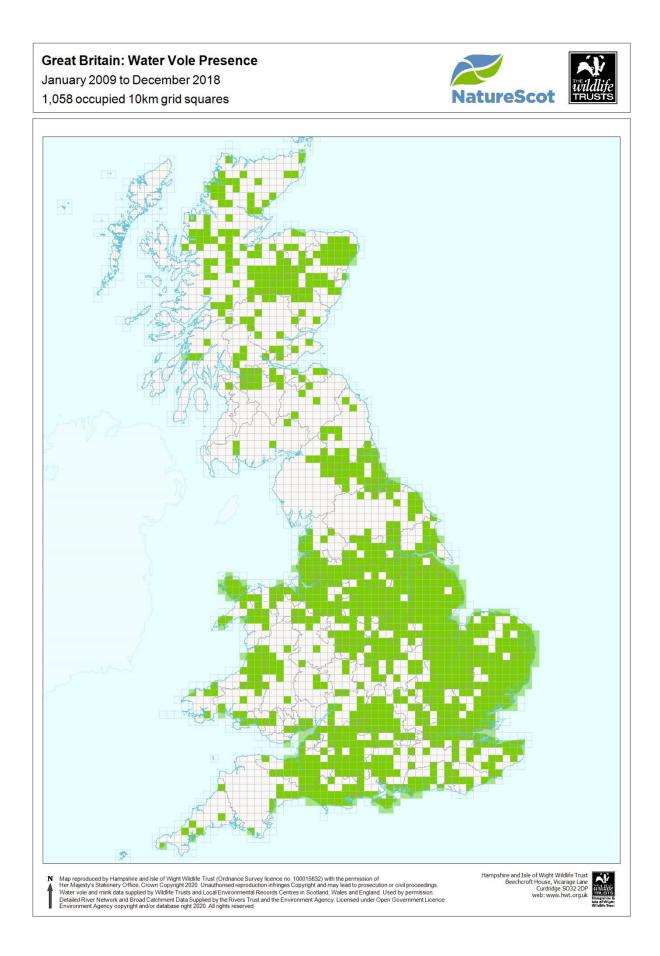
3. GB WATER VOLE DISTRIBUTION MAPS

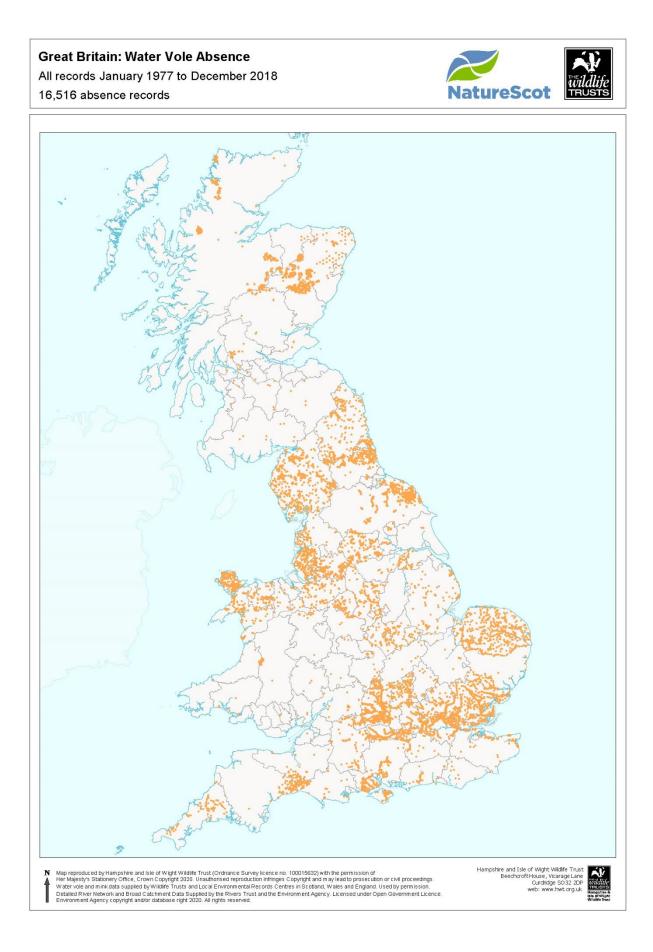


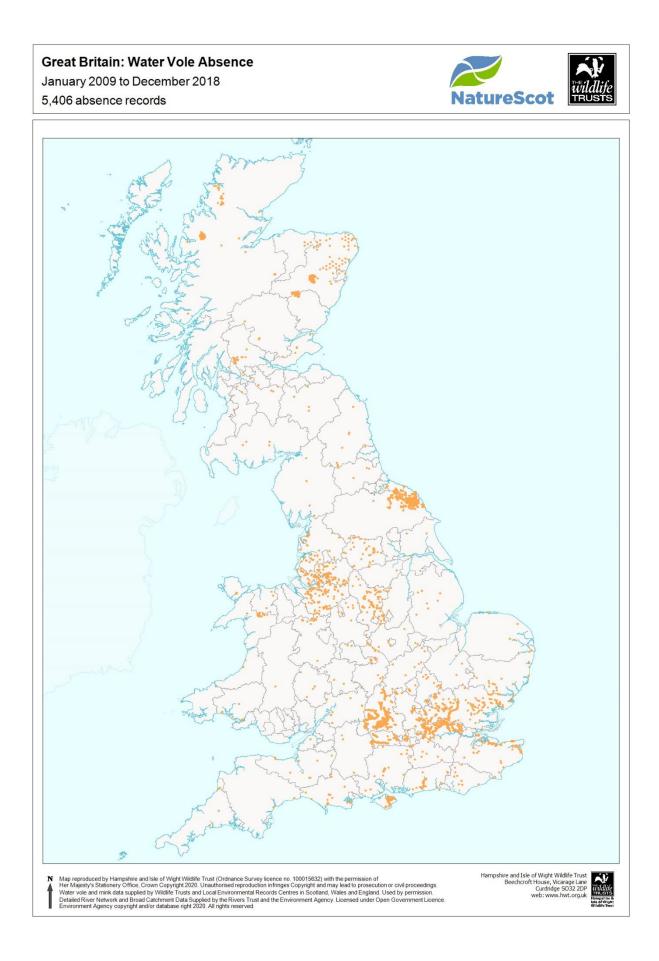
Great Britain: Water Vole Presence

All Records January 1861 to December 2018 1,672 occupied 10km grid squares eScot -Map reproduced by Hampshire and Isle of Wight Wildlife Trust (Ordnance Survey licence no. 100015632) with the permission of Her Majesty's Stationery Office, Crown Copyright 2020. Unauthorised reproduction infiringes Copyright and may lead to prosecution or civil proceedings. Water vole and mink data supplied by Wildlife Trusts and Local Environmental Records Centres in Scotland, Wales and England. Used by permission. Detailed River Network and Broad Catchment Data Supplied by the Rivers Trust and the Environment Agency. Licensed under Open Government Licence. Environment Agency copyright and/or database right 2020. All rights reserved. Hampshire and Isle of Wight Wildlife Trus Beechcroft House, Vicarage Lan Curdridge SO32 2D web: www.hwt.org.ul





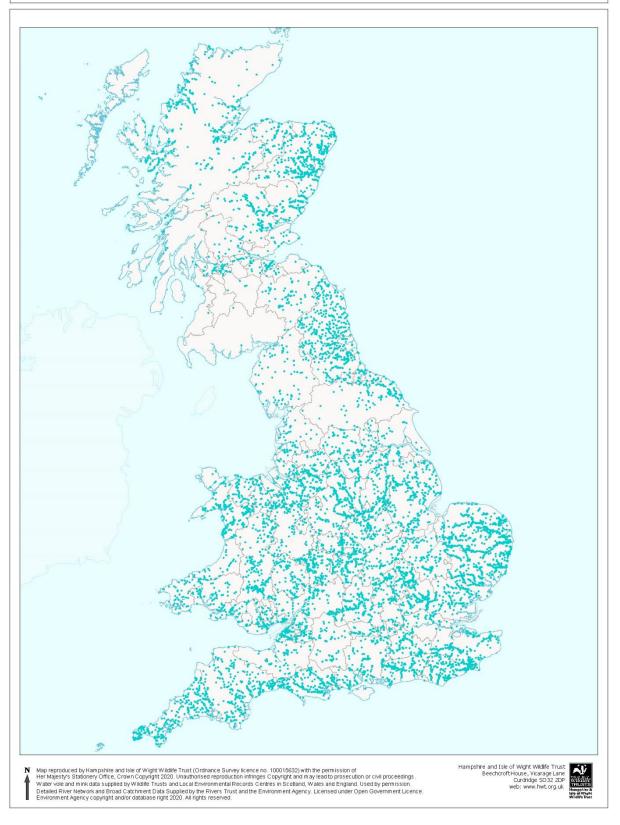




4. GB AMERICAN MINK DISTRIBUTION MAPS

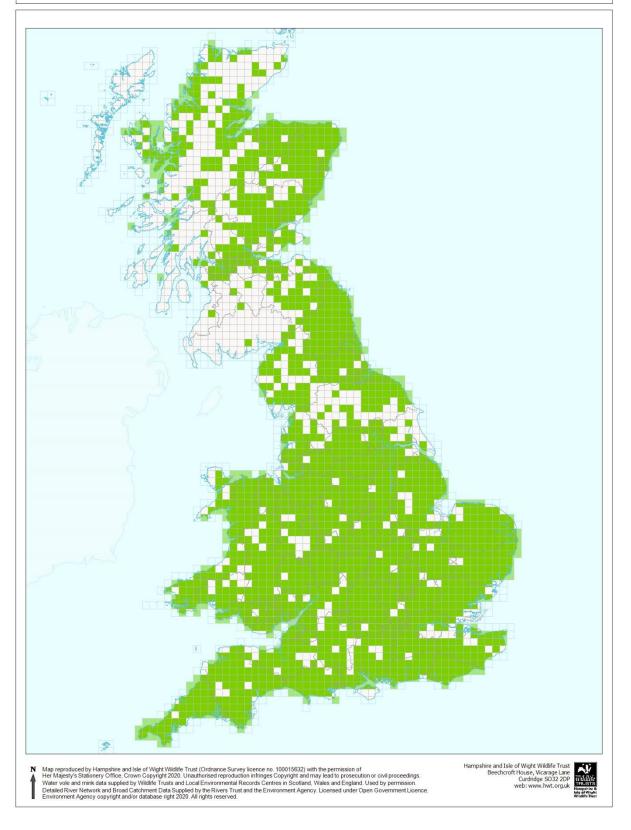
Great Britain: American Mink Presence All records January 1700 to December 2018 19,459 presence records



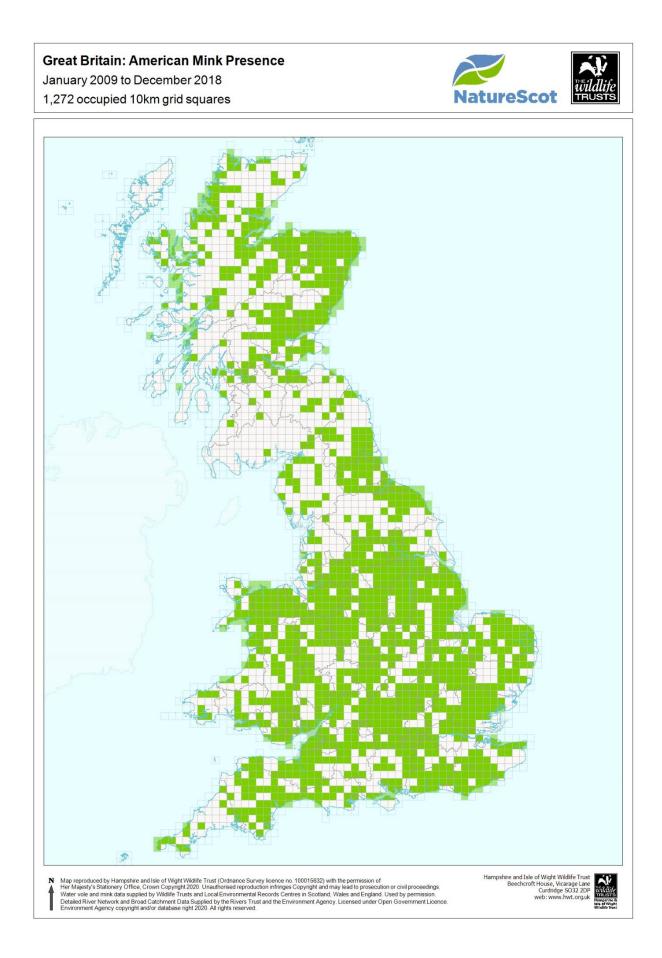


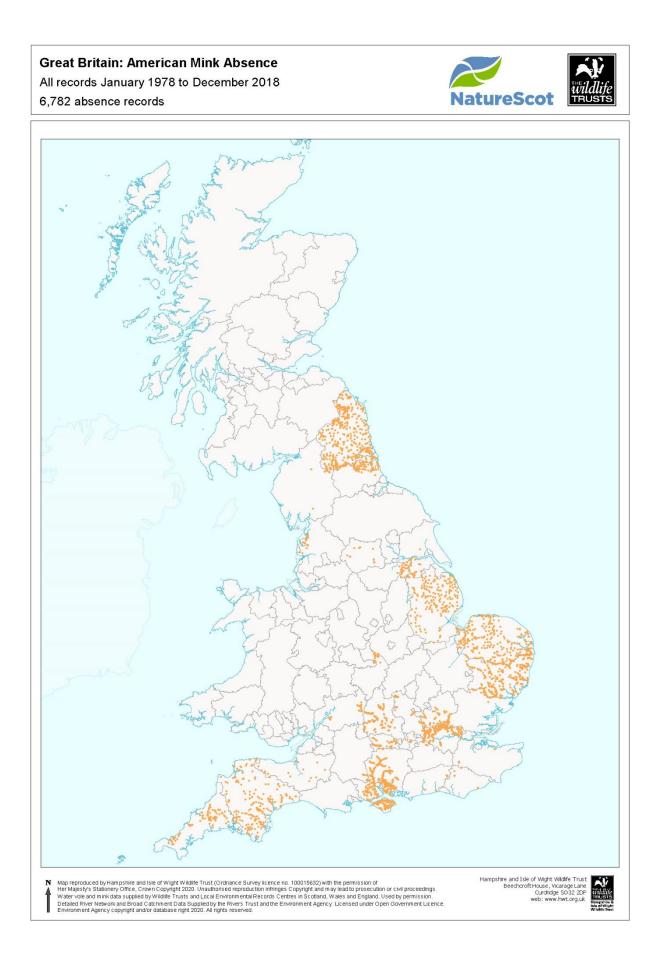
Great Britain: American Mink Presence All records January 1700 to December 2018 1,731 occupied 10km grid squares







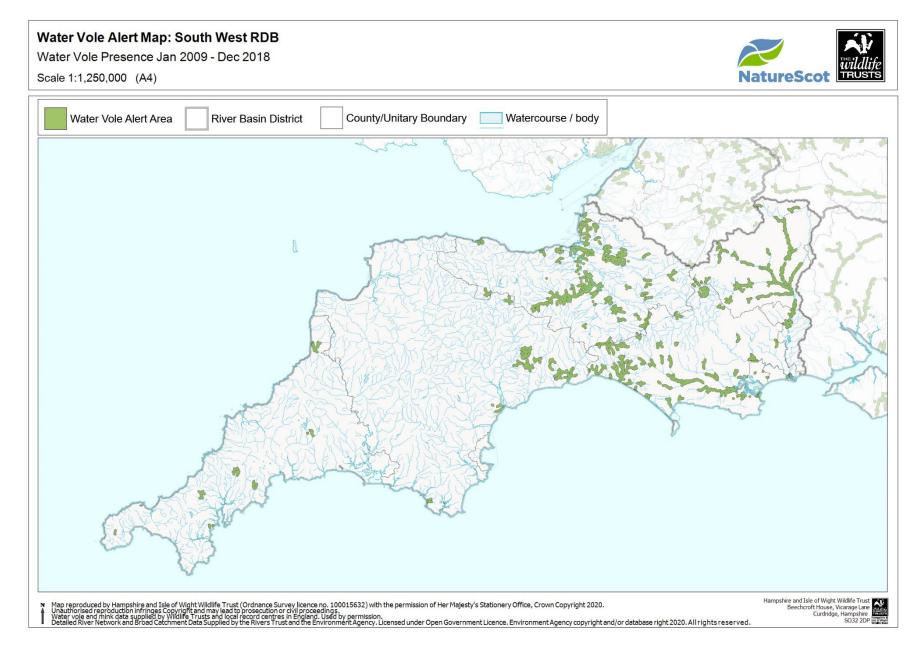


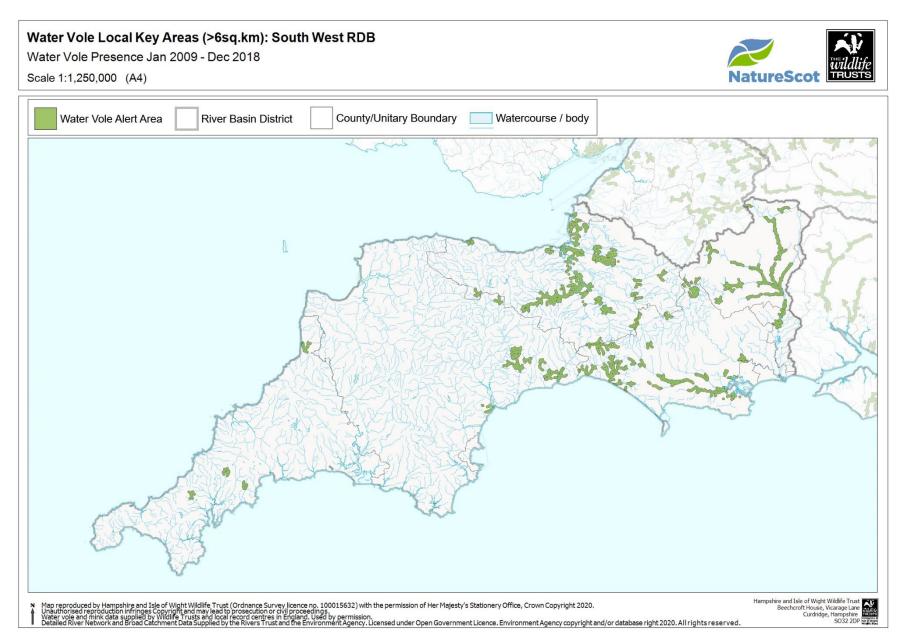


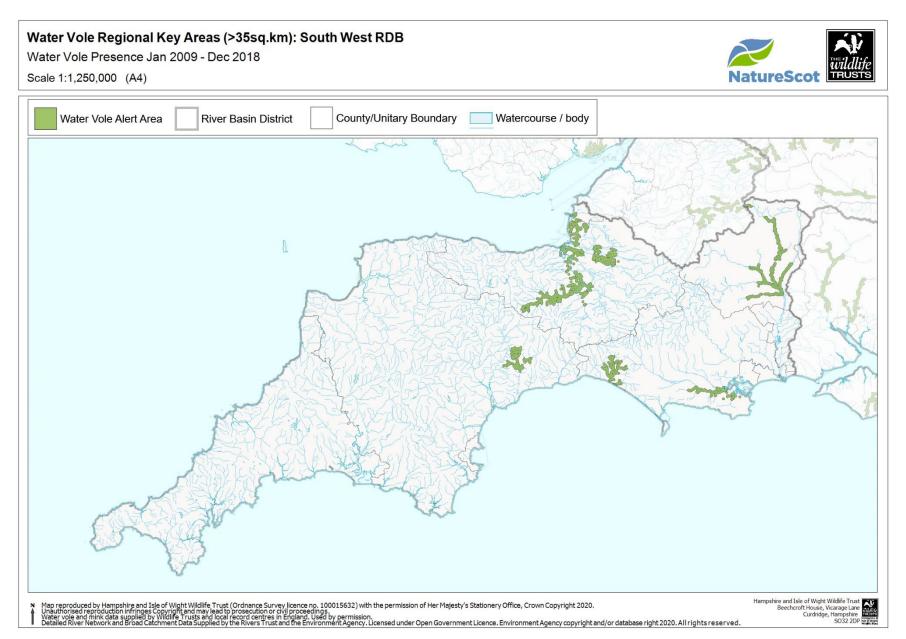


5. WATER VOLE ALERT & KEY AREA MAPS

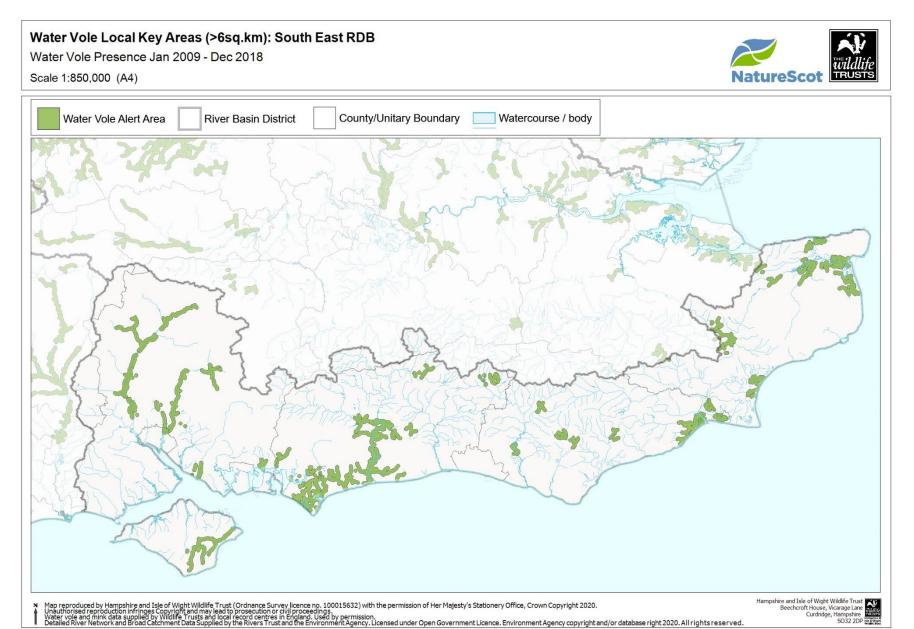
National Water Vole Database and Mapping Project, Part 2: Maps for period 2009-2018 5.1 SOUTH WEST RIVER BASIN DISTRICT





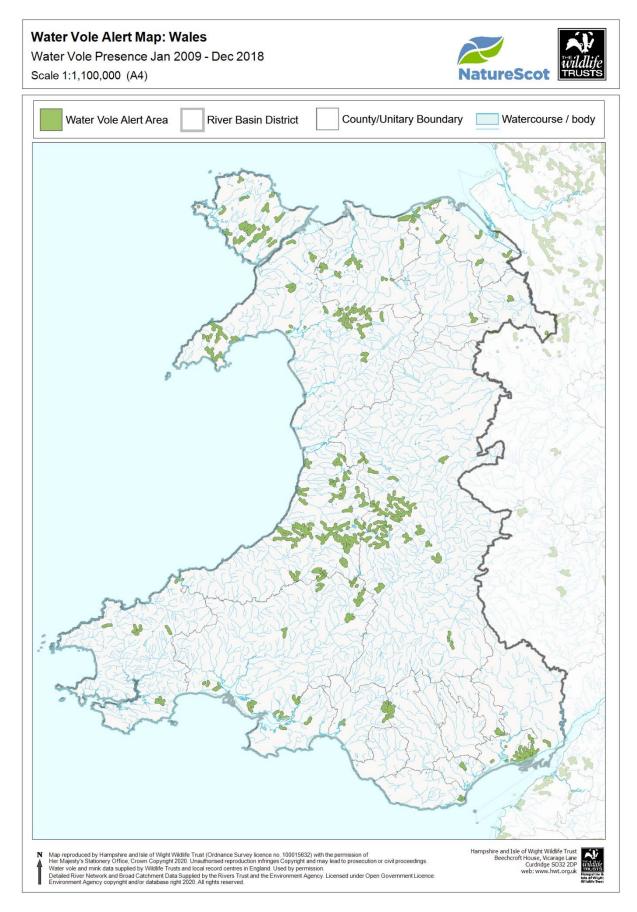


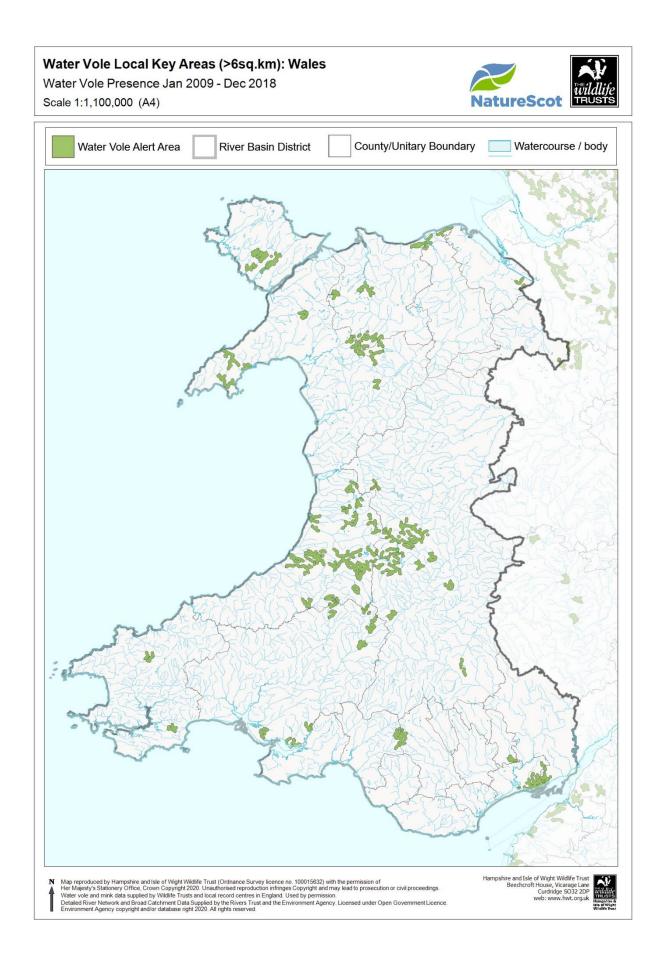


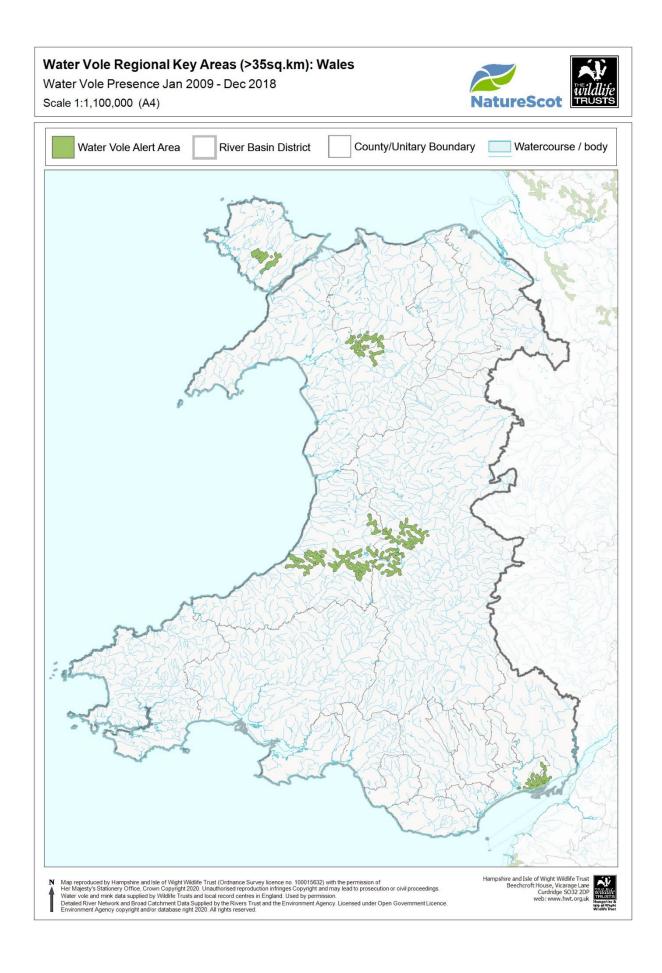


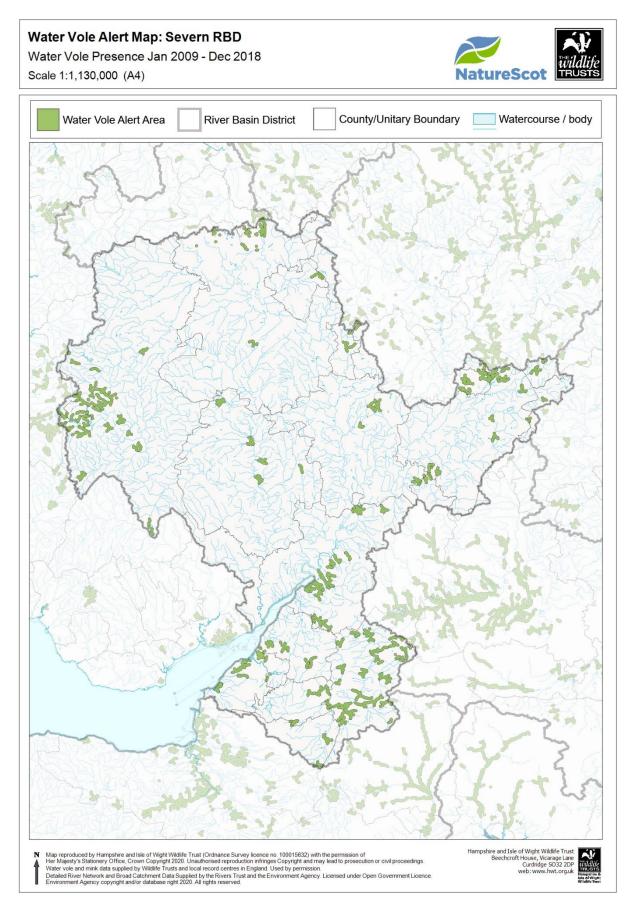
Water Vole Regional Key Areas (>35sq.km): South East RDB Water Vole Presence Jan 2009 - Dec 2018 NatureSco Scale 1:850,000 (A4) County/Unitary Boundary Water Vole Alert Area **River Basin District** Watercourse / body

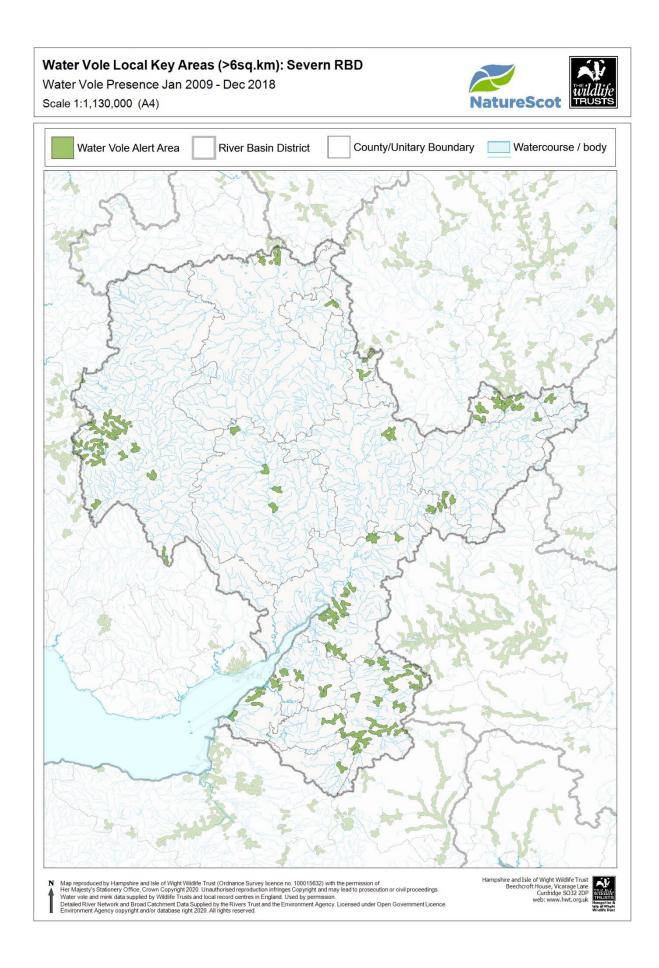
Map reproduced by Hampshire and Isle of Wight Wildlife Trust (Ordnance Survey licence no. 100015632) with the permission of Her Majesty's Stationery Office, Crown Copyright 2020. Unauthorised reproduction infringes Copyright and may lead to prosecution or civil proceedings. Water vole and mink data supplied by Wildlife Trusts and local record entres in England. Used by permission. Detailed River Network and Broad catabase right 2020. All rights reserved. So 32 2DP

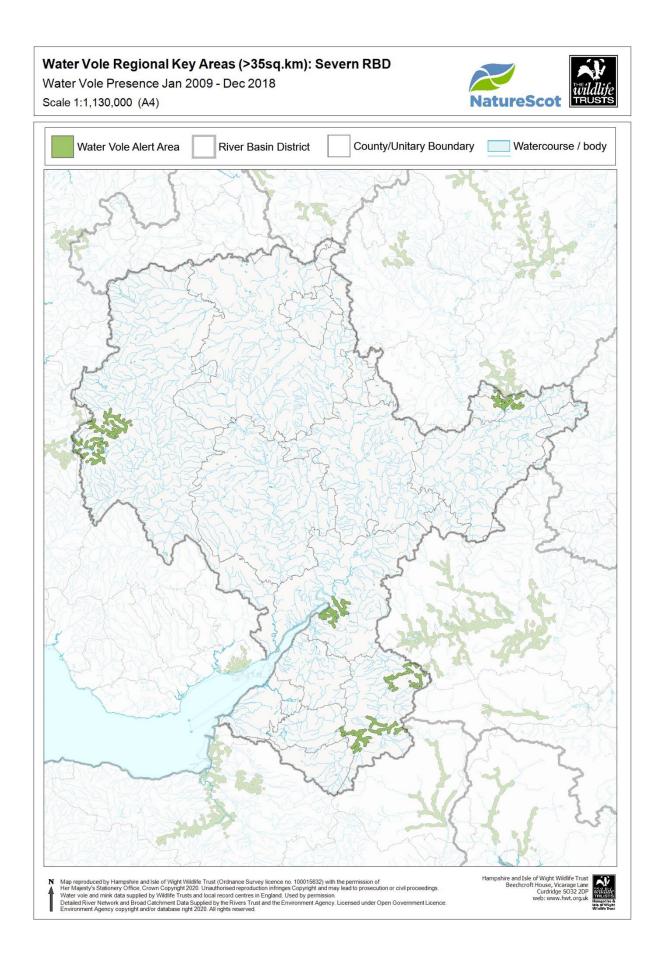




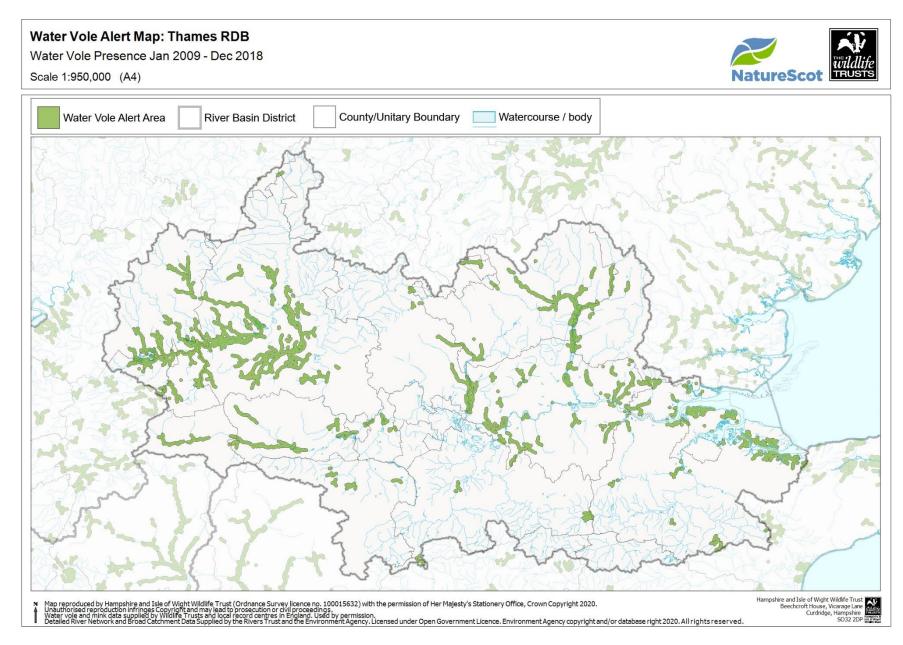


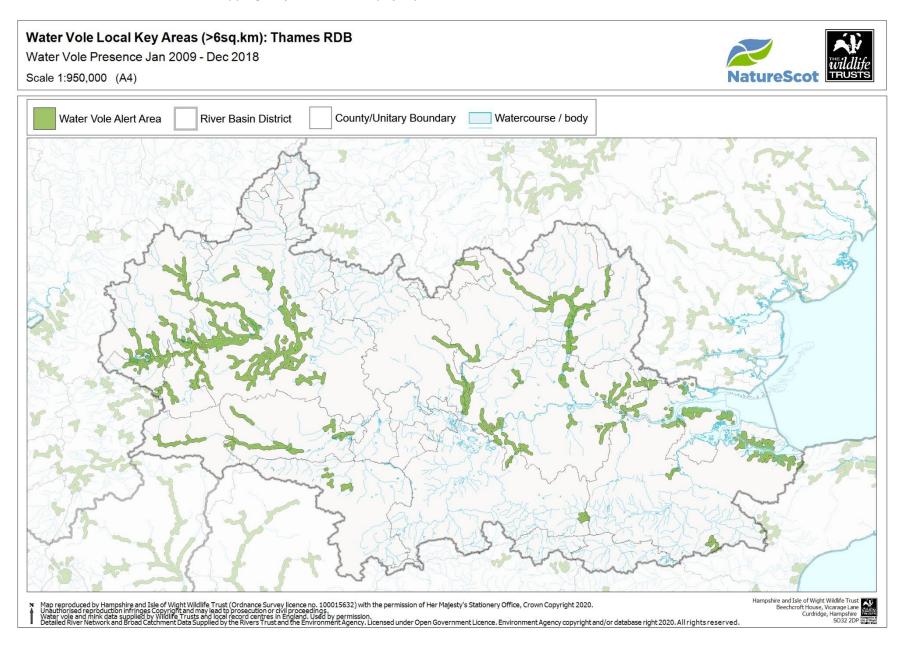


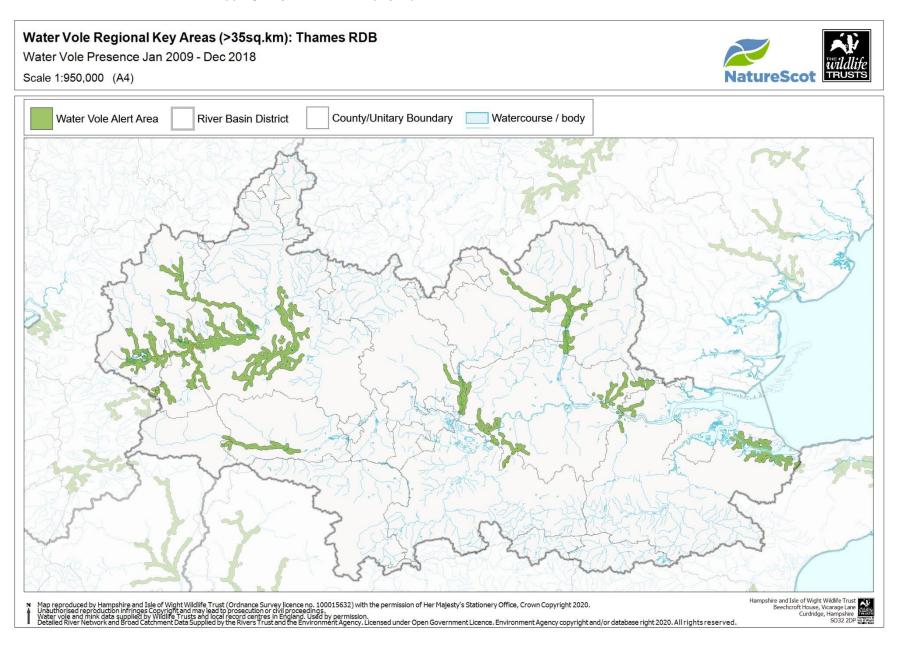




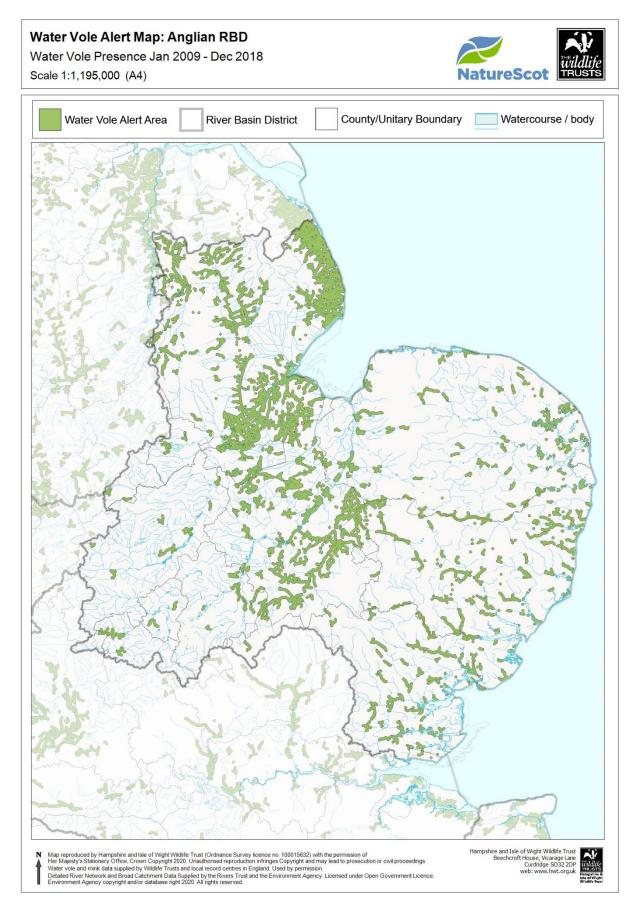
National Water Vole Database and Mapping Project, Part 2: Maps for period 2009-2018 5.5 THAMES RIVER BASIN DISTRICT



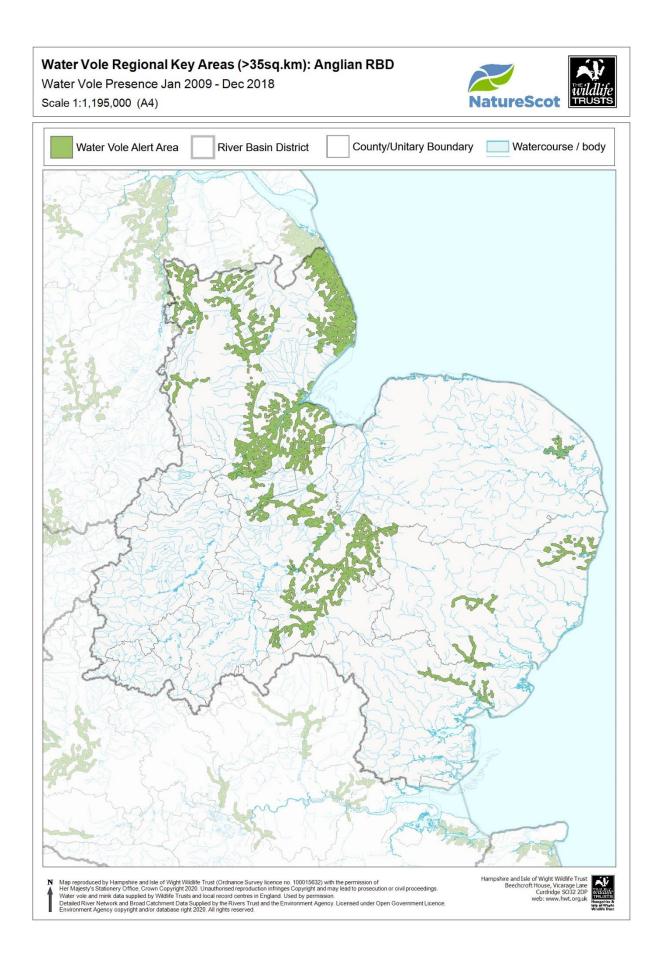


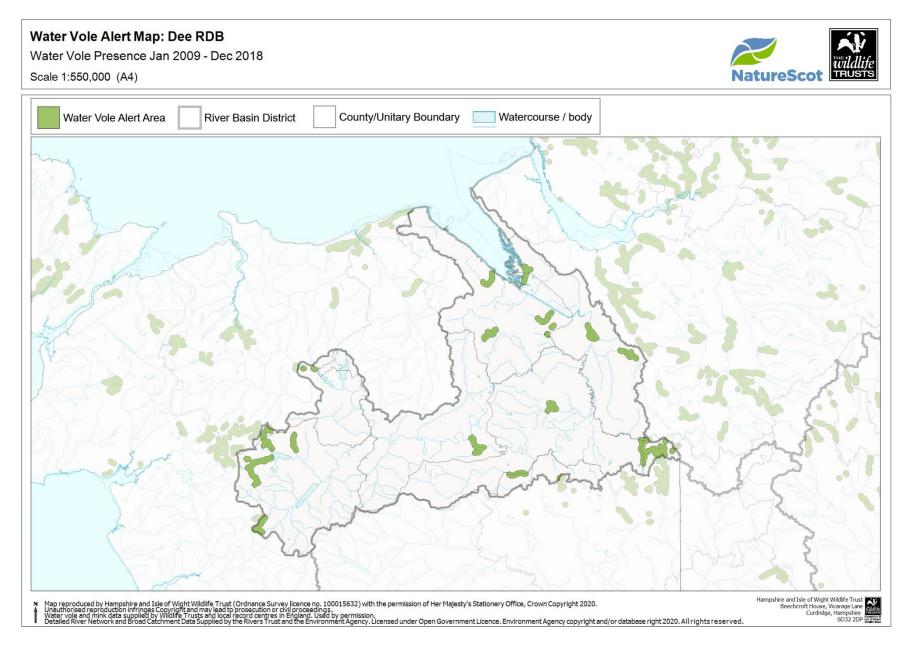


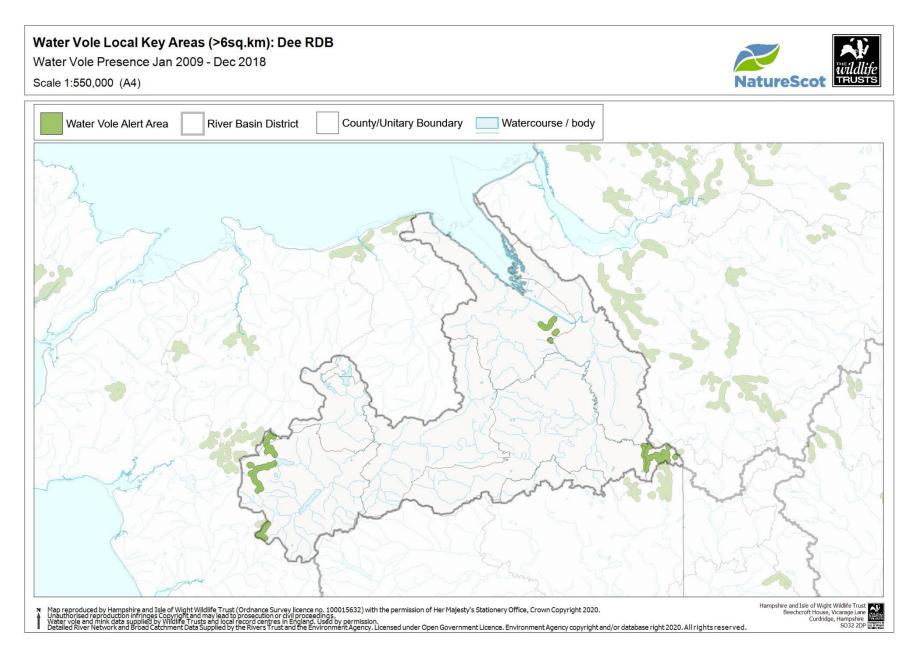
National Water Vole Database and Mapping Project, Part 2: Maps for period 2009-2018 5.6 ANGLIAN RIVER BASIN DISTRICT

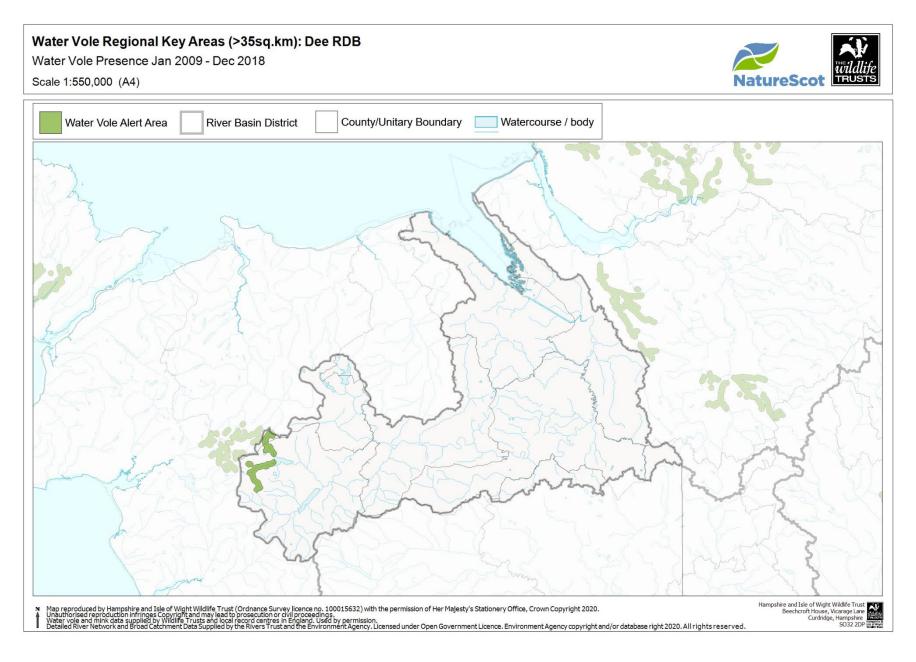




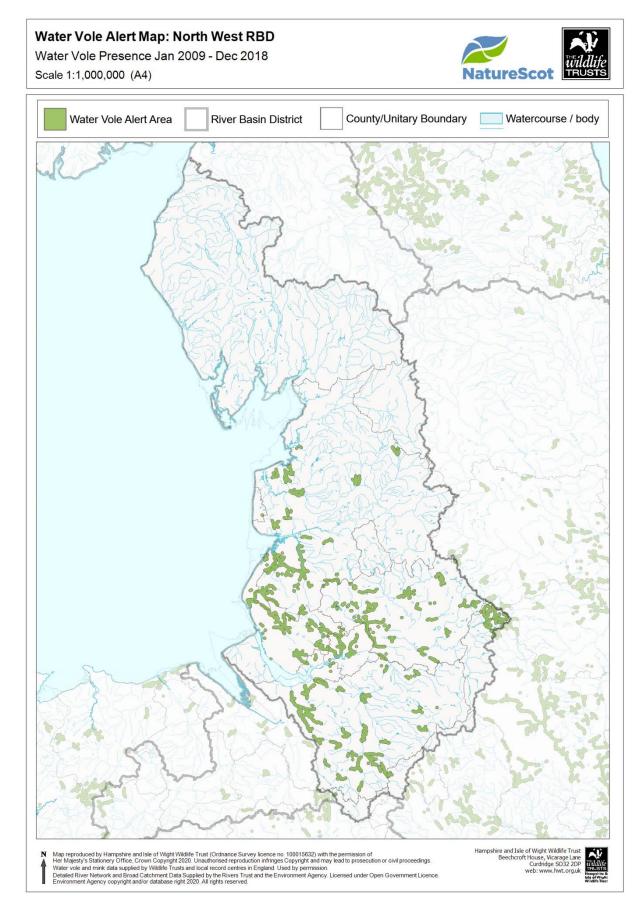


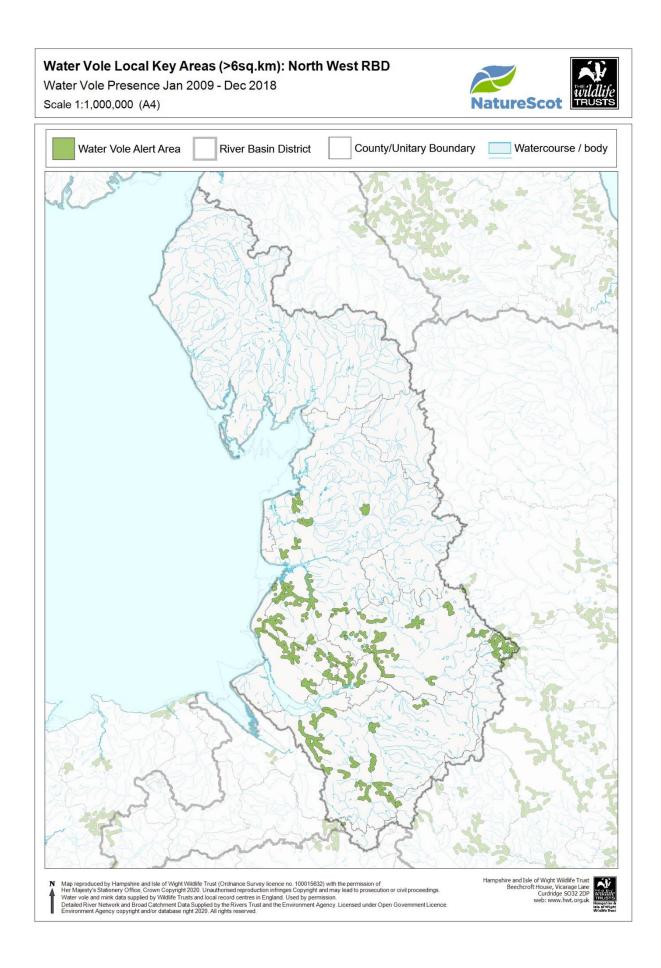


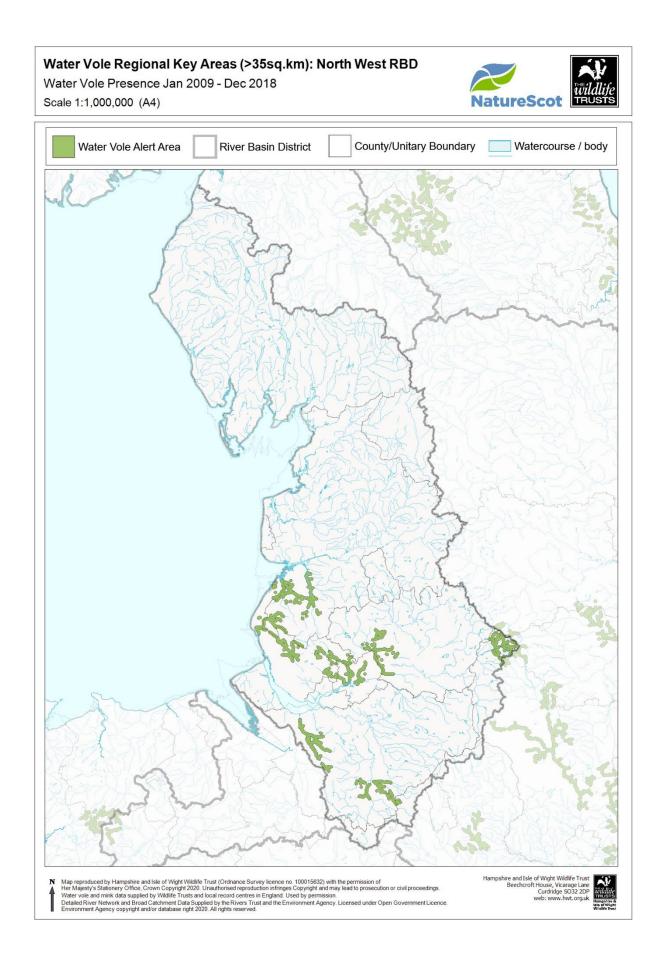




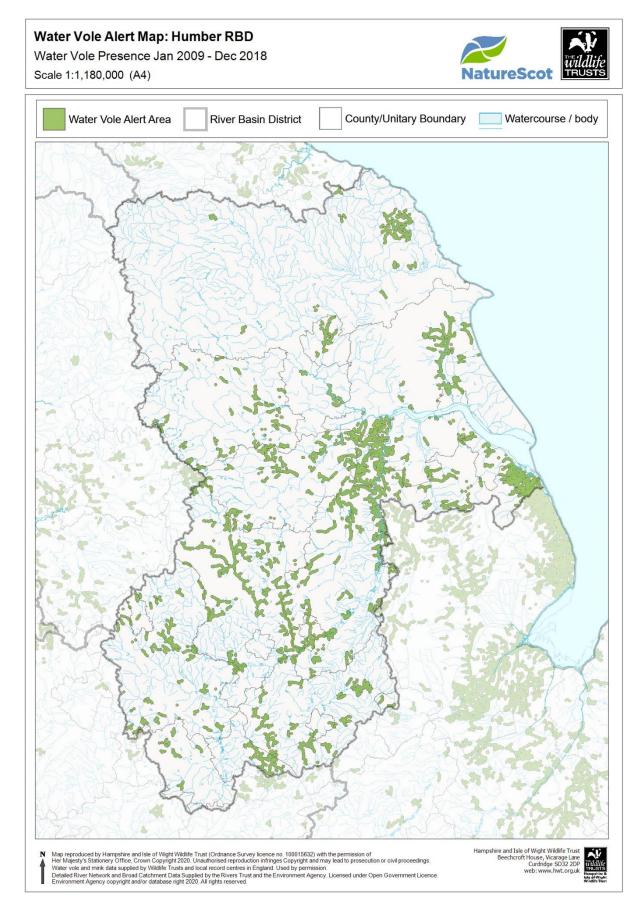
5.8 NORTH WEST RIVER BASIN DISTRICT

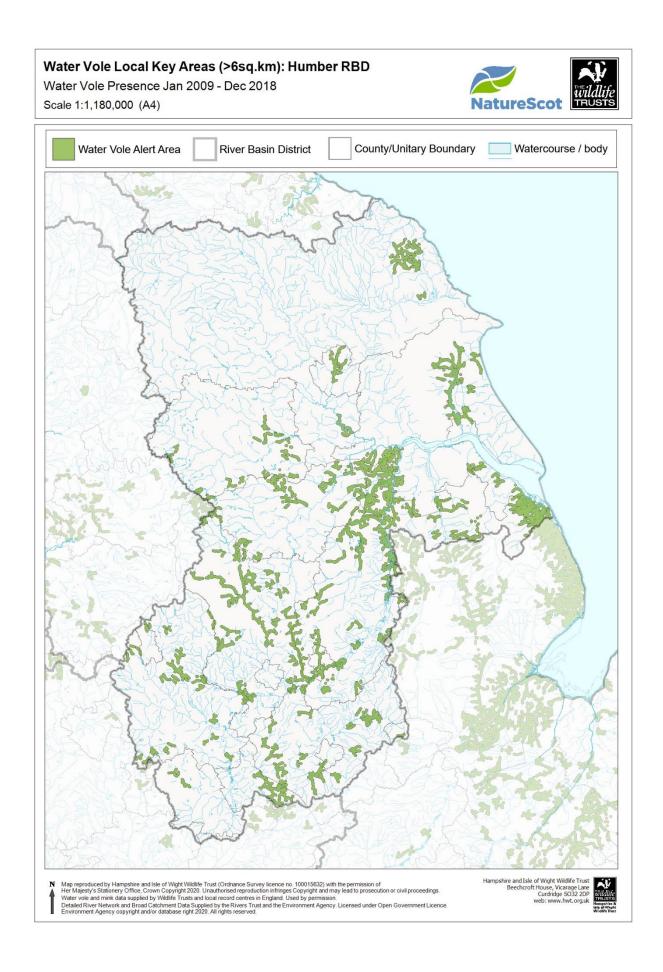


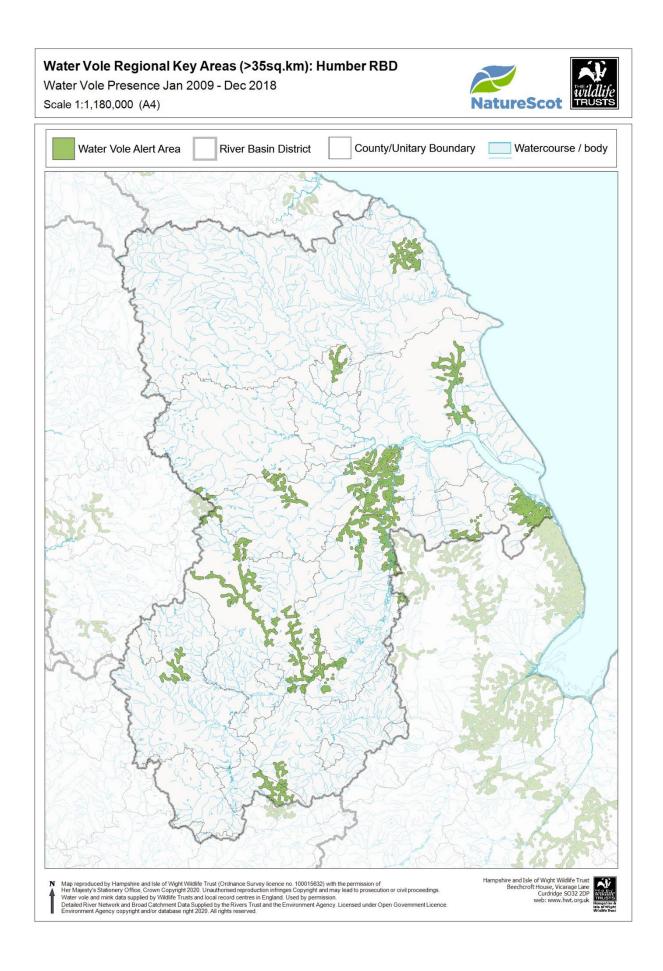




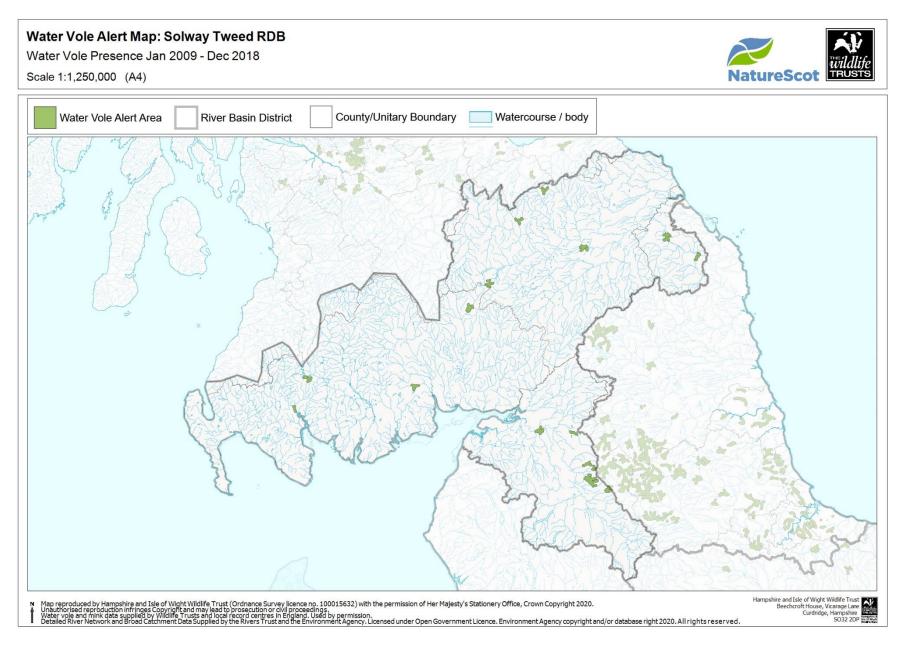
5.9 HUMBER RIVER BASIN DISTRICT

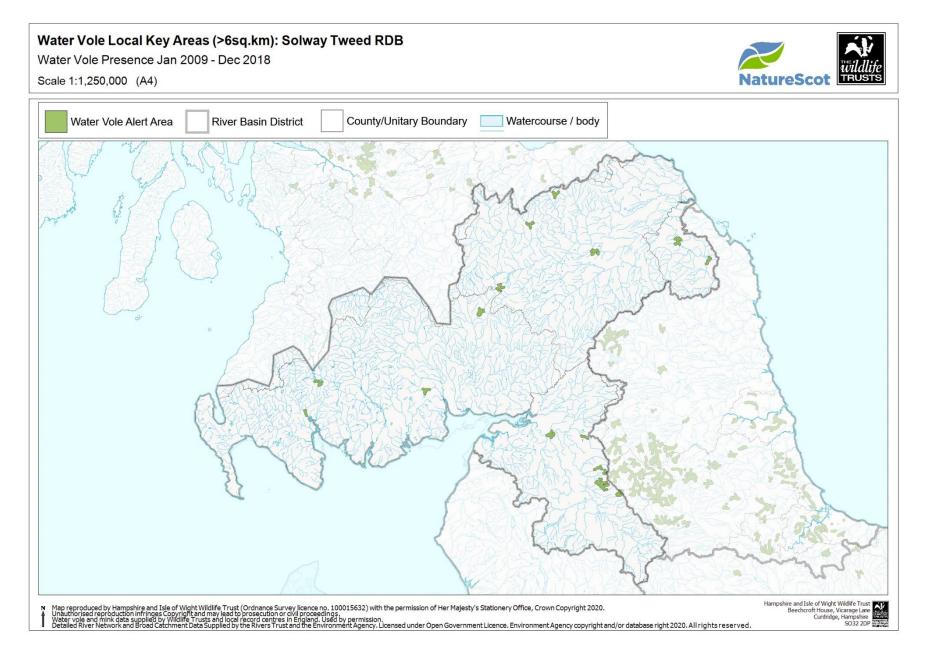






National Water Vole Database and Mapping Project, Part 2: Maps for period 2009-2018 5.10 SOLWAY TWEED RIVER BASIN DISTRICT

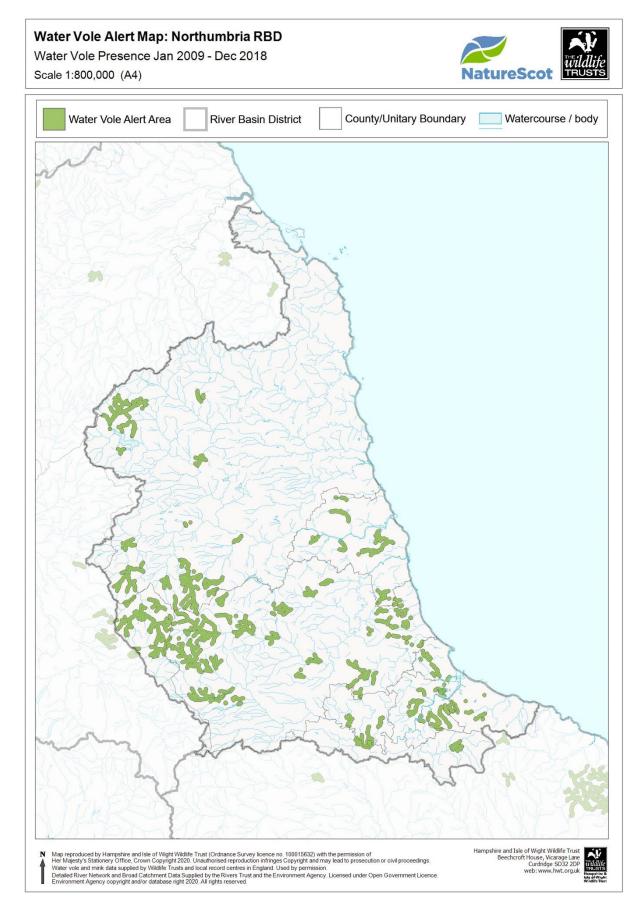


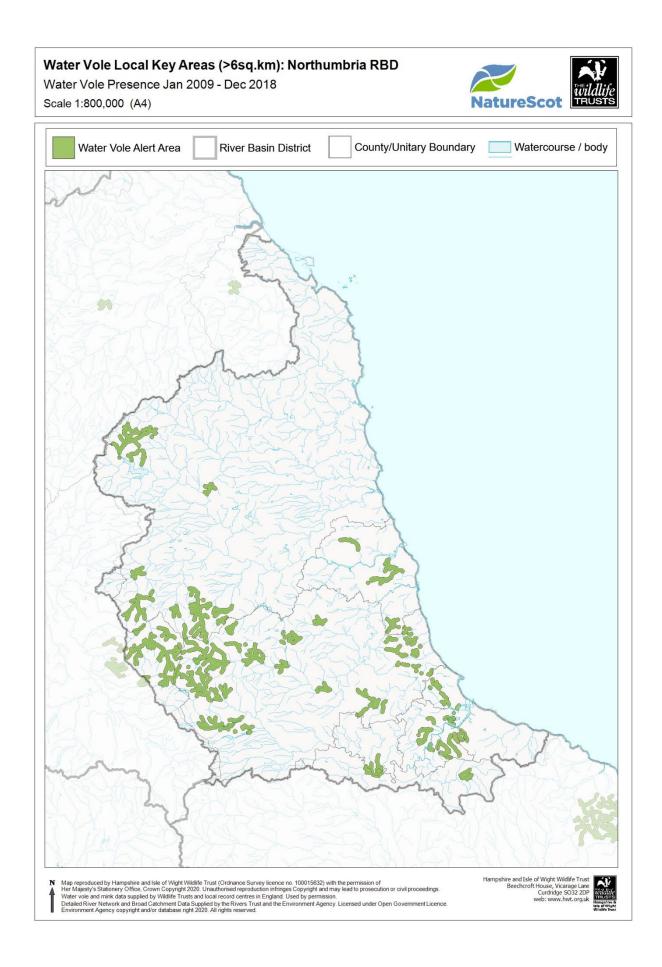


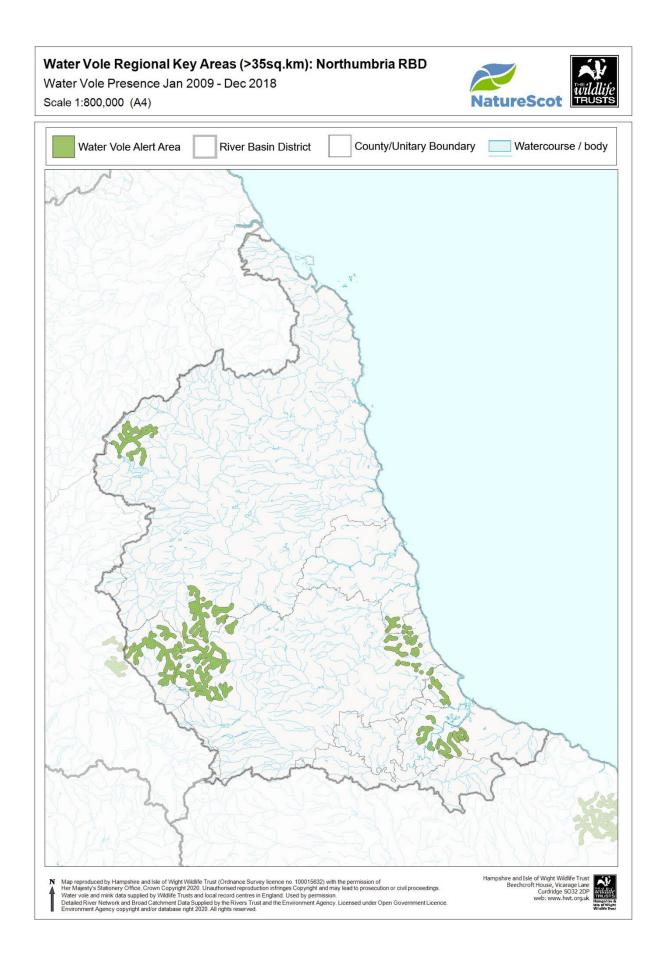
Water Vole Regional Key Areas (>35sq.km): Solway Tweed RDB Water Vole Presence Jan 2009 - Dec 2018 NatureScot Scale 1:1,250,000 (A4) Water Vole Alert Area **River Basin District** County/Unitary Boundary Watercourse / body

Map reproduced by Hampshire and Isle of Wight Wildlife Trust (Ordnance Survey licence no. 100015632) with the permission of Her Majesty's Stationery Office, Crown Copyright 2020.
 Hampshire and Isle of Wight Wildlife Trust Becharot House, Vicarage Lane Curridge Hampshire and Isle of Wight Wildlife Trust and Hocal record centres in England. Used by prosecution or civil proceedings.
 Detailed River Network and Broad Catchment Data Supplied by Wildlife Trust and the Environment Agency. Licensed under Open Government Licence. Environment Agency copyright and/or database right 2020. All rights reserved.

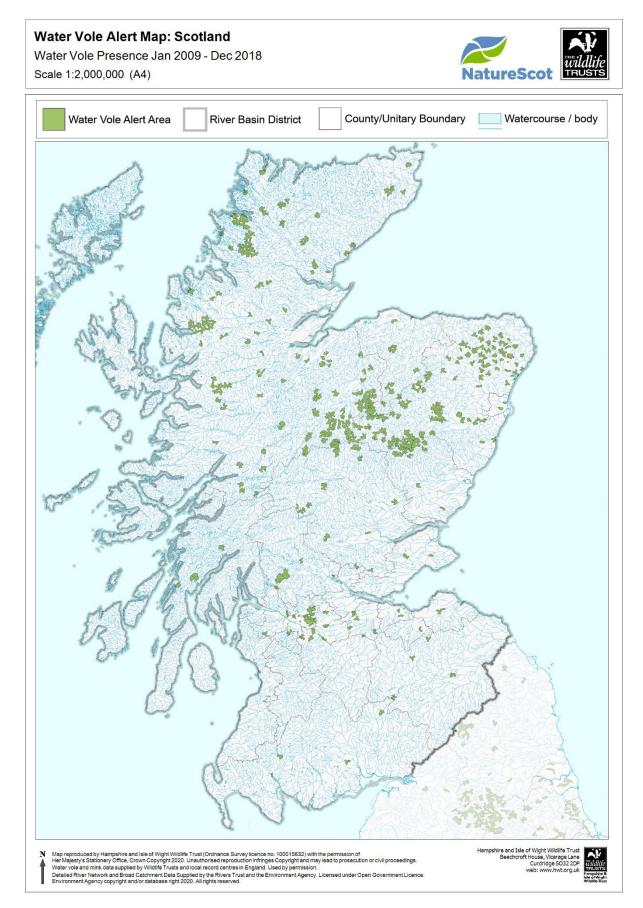
5.11 NORTHUMBRIA RIVER BASIN DISTRICT

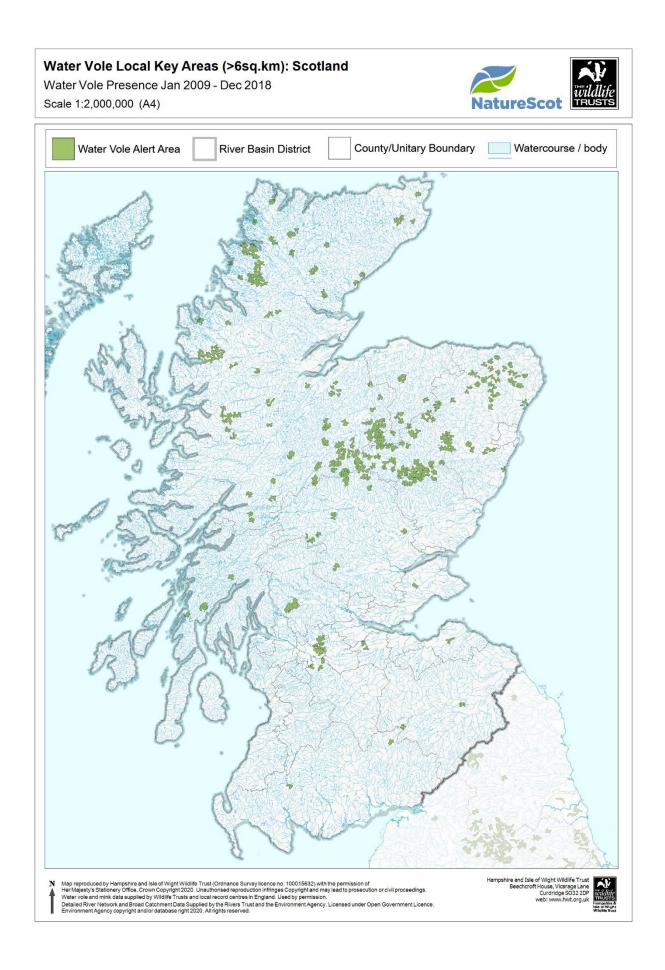


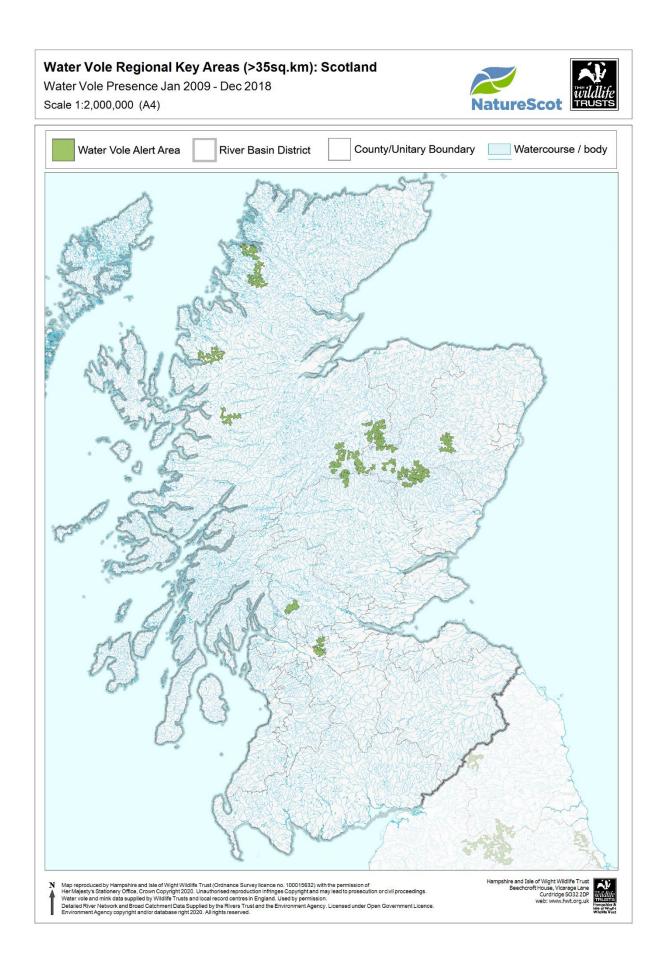




5.12 SCOTLAND



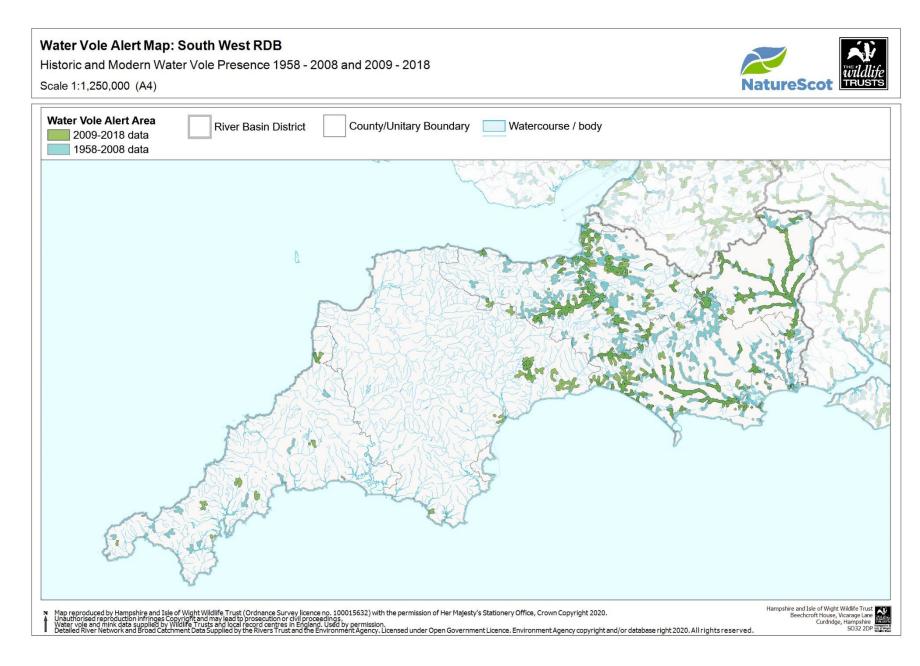


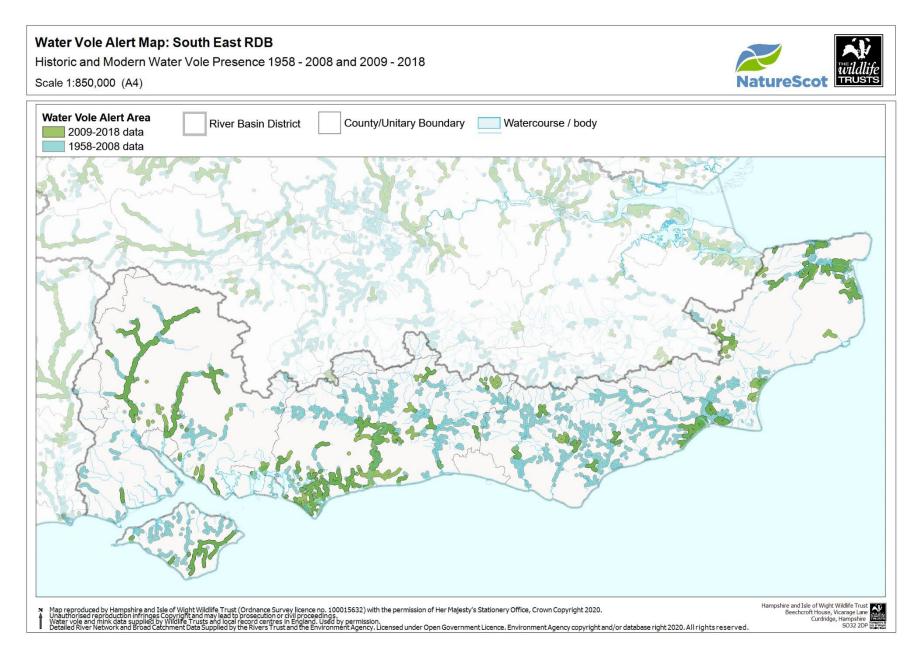


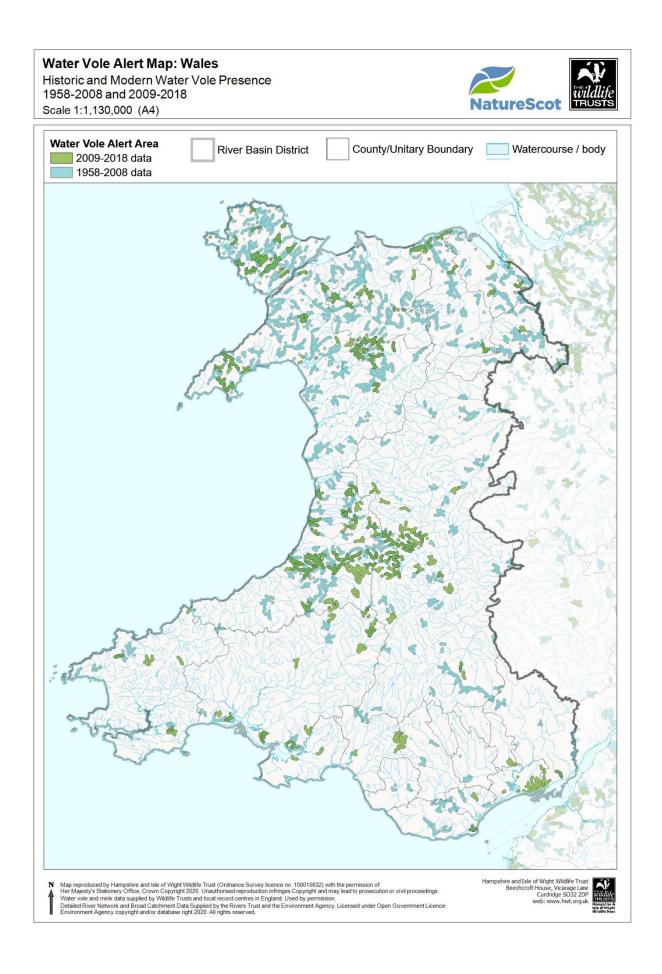
5.13 GREAT BRITAIN WATER VOLE REGIONAL KEY AREAS MAP

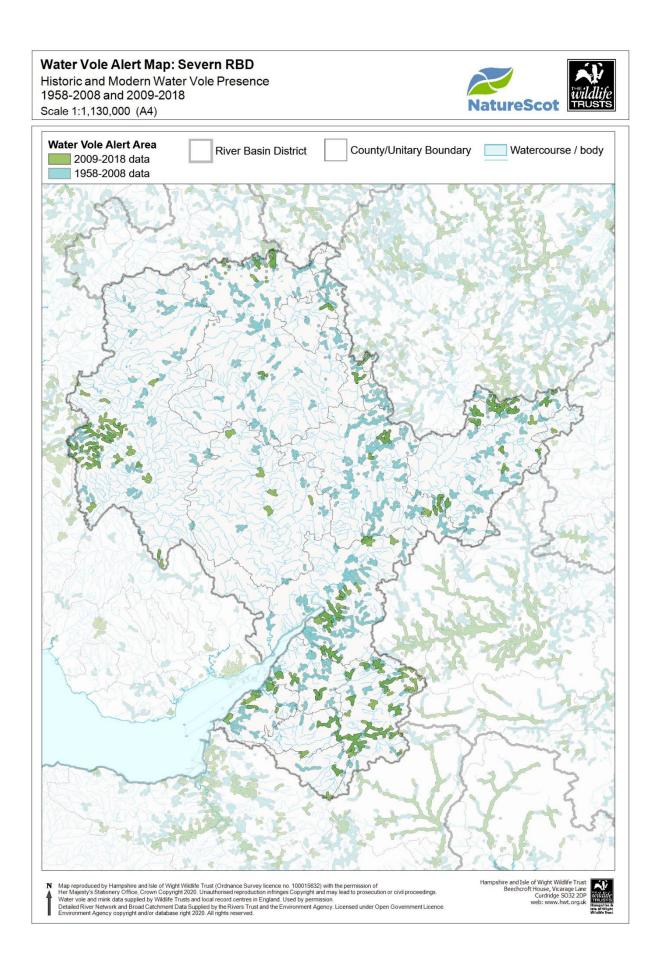


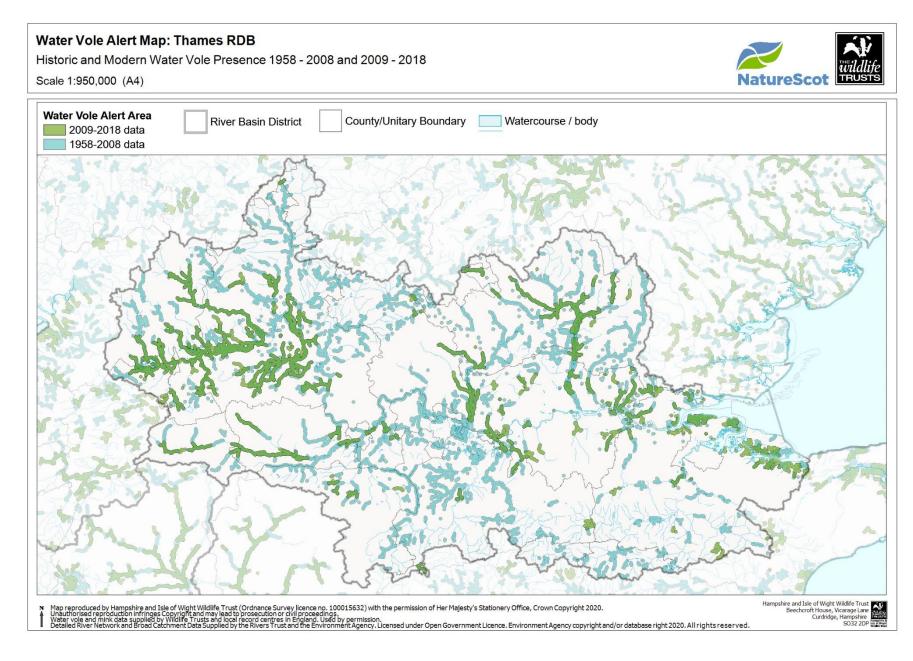
6. HISTORIC DATA WATER VOLE ALERT MAPS

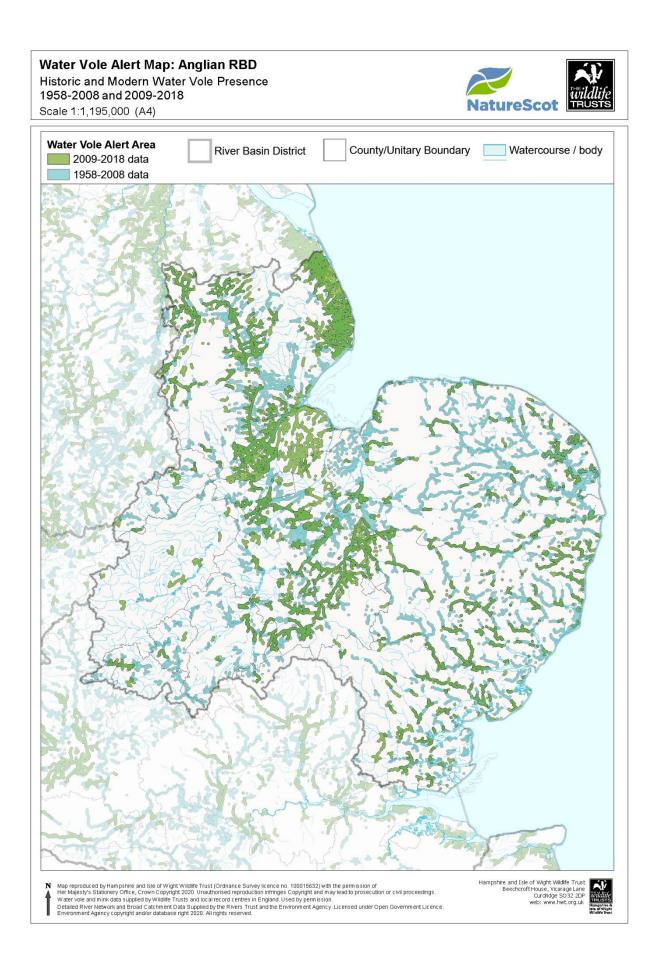


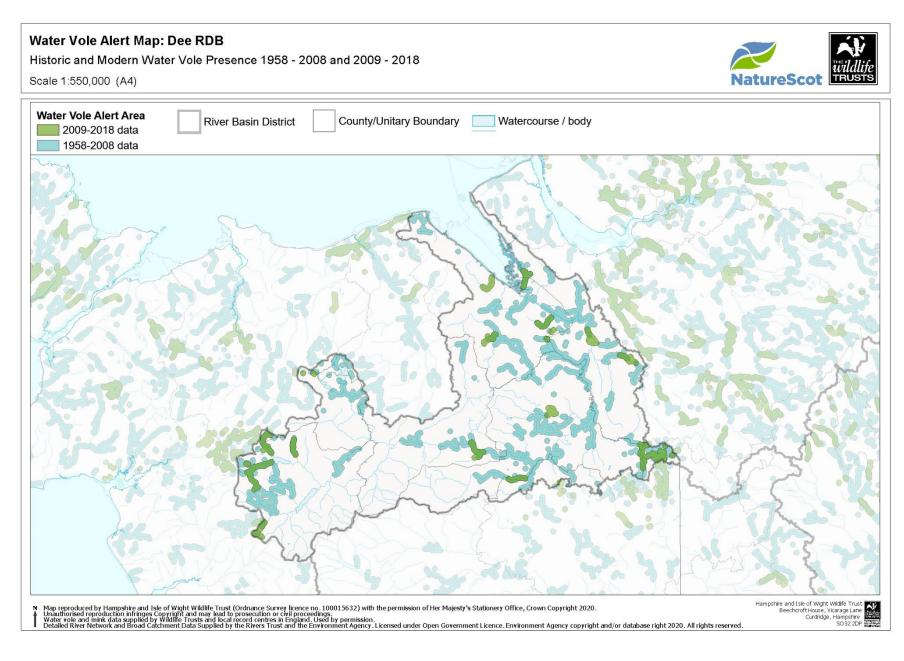


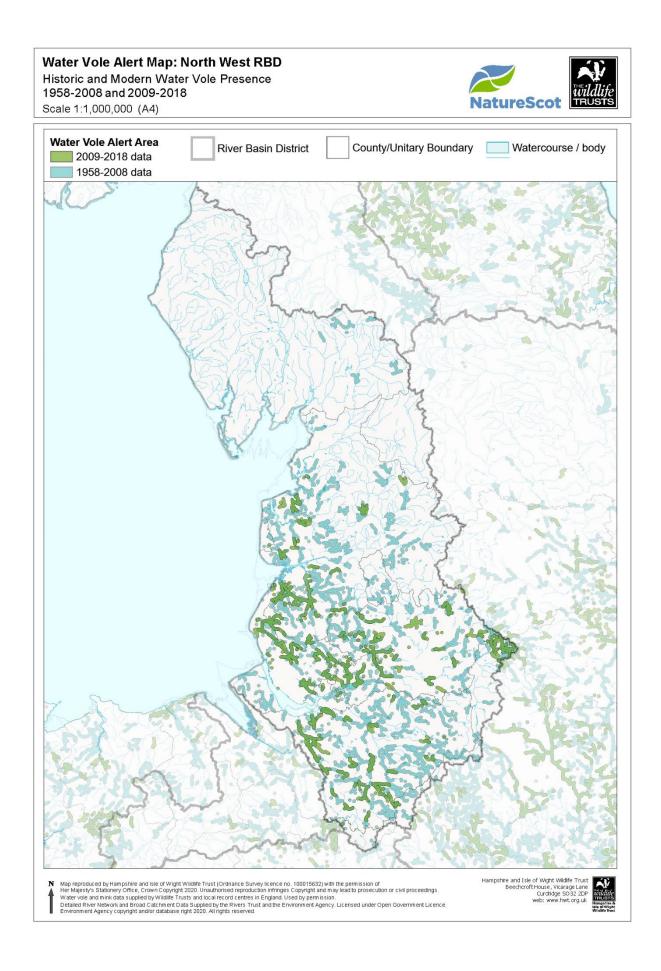


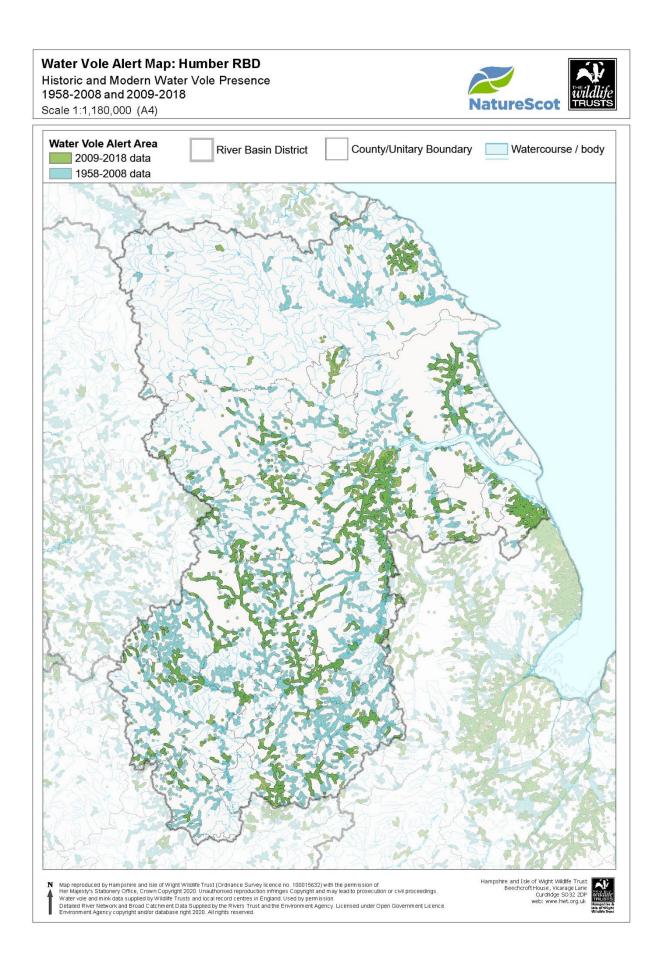


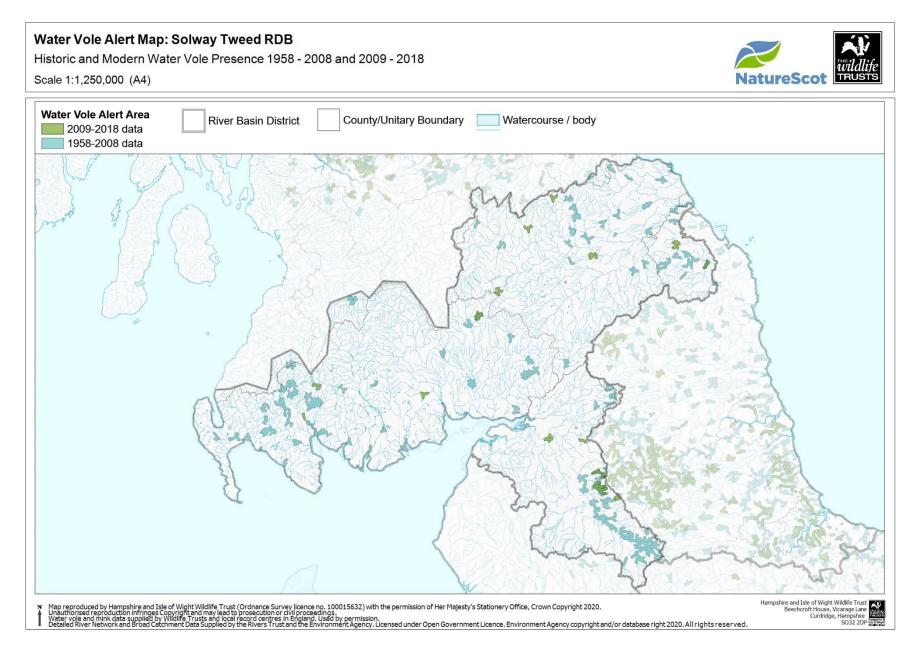


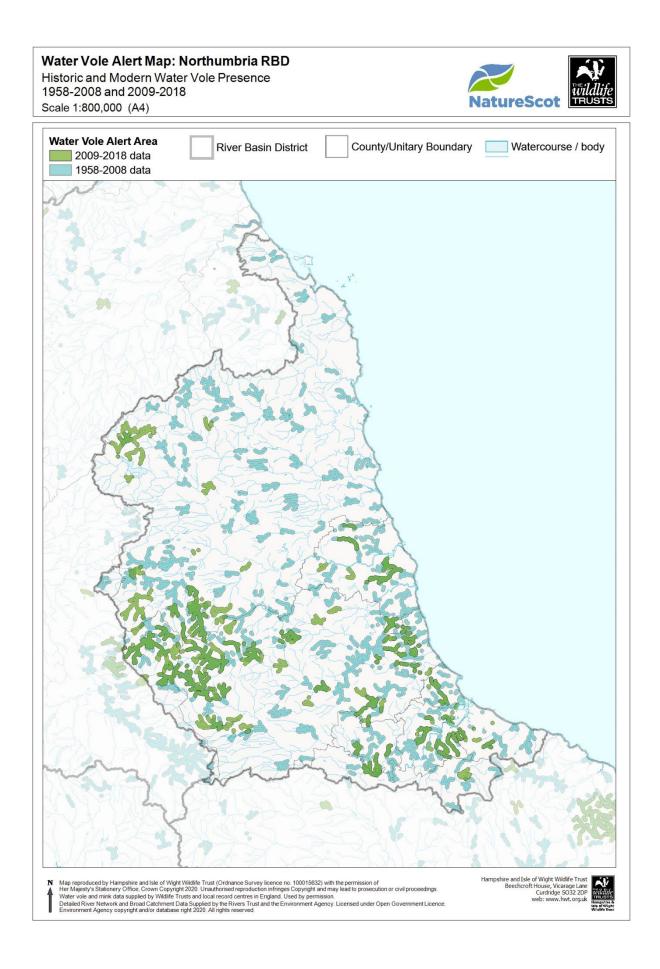


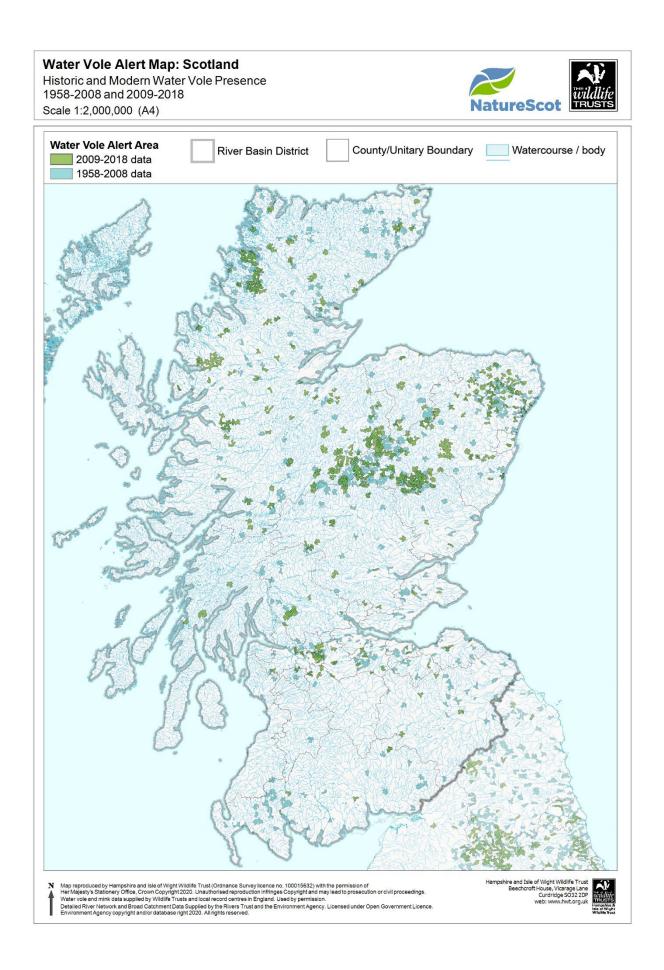












7. WATER VOLE REINTRODUCTIONS

The map of water vole reintroductions has been updated to September 2019, with data supplied by a number of Wildlife Trusts, South Downs National Park Authority and Derek Gow Consultancy.

ID	Location
1	Llangors
2	River Dore
3	Queen Elizabeth Forest Park - Aberfoyle
4	Brandon Marsh, Kirkby in Ashfield
5	Netheridge Nature Reserve
6	Arundel
7	Barn Elms Reservoir
8	River Colne
9	Dartford Park
10	West Malling
11	Rainham Marsh
12	Pagham Harbour
13	Upper Thames
14	River Tale
15	River Axe
16	Ruxley Gravel Pits
17	Alver Valley
18	Foxglove Covert
19	Rutland Water
20	Ayreshire - Darley Burn, Troon
21	Ayreshire - Slaphouse Burn, Ayr
22	Moors Valley
23	Portbury Docks
24	Alston, Cumbria
25	Bedfont Lakes Country Park
26a	R Meon, Hants: Upper Titchfield Haven
26b	R Meon, Hants: Abbey Meadows, Titchfield
26c	R Meon, Hants: Fontley
26d	R Meon, Hants: Warnford
26e	R Meon, Hants: Mayles Lane, Wickham
26f	R Meon, Hants: Kingsmead
26g	R Meon, Hants: Mislingford, Kingsmead
26h	R Meon, Hants: Holywell
26i	R Meon, Hants: St Clairs, Soberton
26j	R Meon, Hants: Brockwood House Meadow
26k	R Meon, Hants: Exton
261	R Meon, Hants: Midlington
26m	River Meon: East Meon

Key to numbered sites:

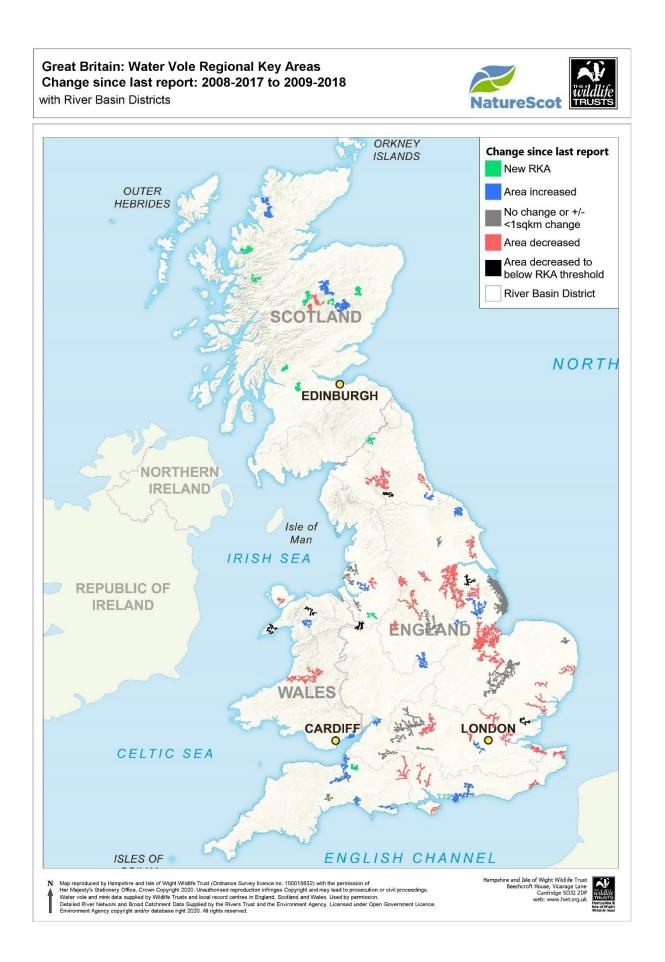
ID	Location
26n	River Meon: Frogmore
260	River Meon Meon: Drayton
26p	River Meon Meon: Meonstoke
26q	River Meon: West Meon
27	Bude
28	Magor Marsh
29	Ffrwd Farm Mire, Pembrey
30	Carmarthen
31	Thurlestone
32	Thorley Wash
33	Cosmeston Country Park, Penarth
34a	Ouse 1
34b	Ouse 2
35b	Lower Windrush 2
35a	Lower Windrush 1
36a	Thame 1
36b	Thame 2
37	Swere
38	Evenlode
39a	Glyme 1
39b	Glyme 2
40	Kirkby in Ashfield
41	Kingsnorth
42	Malham Tarn
43a	Kielder Water and Forest Park
43b	Kielder Water and Forest Park
43c	Kielder Water and Forest Park
44	Sevenoaks Wildlife Reserve
45	Sandford Mire, Warcop
46	Warcop Training Area
47	Holnicote
48a	Seaton Marshes
48b	Seaton Marshes
49	Hemel Hempstead
50	Holnicote
51	Cholmondley Estate
52	Cosmeston Lakes



Hampshire and Isle of Wight Wildlife Trust

National Water Vole Database and Mapping Project, Part 2: Maps for period 2009-2018

8. REGIONAL KEY AREAS: CHANGE OVER TIME



Hampshire and Isle of Wight Wildlife Trust

9. ACKNOWLEDGEMENTS

This update to the National Water Vole Database & Mapping Project has been made possible by funding from The Wildlife Trusts and NatureScot.



The Environment Agency, Natural Resources Wales, and People's Trust for Endangered Species (PTES) have also previously provided funding to support this project.

Updating the project would not be possible without the time and dedication of the Local Environmental Records Centres, Wildlife Trusts, and other organisations who freely contribute their records to the project each year. Special thanks goes to the many volunteers involved in surveying and collating data, as well as the countless members of the public who continue to send their water vole and mink sightings to LERCs, Wildlife Trusts, PTES and other dedicated water vole recording schemes. All play an integral part in the project by providing the evidence we need to assess the state of the British water vole population.

10. PUBLICATION DETAILS

This document should be cited as: McGuire, C. and Morse, A. (2020) *National Water Vole Database and Mapping Project, PART 2: Project Maps for period 2009-2018.* Hampshire and Isle of Wight Wildlife Trust. Curdridge

These pdf maps are free to download, but please credit the National Water Vole Database & Mapping Project in any published material arising from your use of the maps. Please inform Hampshire & Isle of Wight Wildlife Trust if you use or cite the project report or outputs so we can better understand how the project aids water vole conservation.

Maps reproduced by Hampshire and Isle of Wight Wildlife Trust (Ordnance Survey licence no. 100015632) with the permission of Her Majesty's Stationery Office, Crown Copyright 2020. Unauthorised reproduction infringes Copyright and may lead to prosecution or civil proceedings.

Front Cover: Water Vole (Arvicola amphibius), Kent, UK. Copyright Terry Whittaker/2020VISION.

Published by: Hampshire and Isle of Wight Wildlife Trust Beechcroft House, Vicarage Lane Curdridge, Hampshire, SO32 2DP

A company Ltd by guarantee & registered in England No. 676313; Charity No. 201081.

All assessments and recommendations provided are based on the information available to Hampshire and Isle of Wight Wildlife Trust (HIWWT), and HIWWT endeavours to ensure all advice is accurate and appropriate at the time of publication. However, it is the sole responsibility of the recipient to ensure that any actions they take are both legally and contractually compliant, and HIWWT does not accept responsibility or liability for any losses incurred or arising from the advice we provide.

No part of this document may be reproduced without permission. Requests for the raw data from which the alert maps are derived should be directed to the relevant Local Environmental Records Centre. A GIS file of the derived alert layers and bespoke mapping services are available from Hampshire & Isle of Wight Wildlife Trust on request for conservation purposes and subject to restrictions on use and sharing; a fee may be charged for this service.