

A CLA WATER STRATEGY: A VISION FOR THE WATER ENVIRONMENT TO 2030



WWW.CLA.ORG.UK



CONTACTS

For more information on *A CLA Water Strategy: a vision for the water environment to 2030*, published in May 2021, contact:

Alice Ritchie
Policy Adviser on Climate Change and Water
Tel: 020 7460 7941
Email: alice.ritchie@cla.org.uk

CLA
16 Belgrave Square
London SW1X 8PQ

Tel: 020 7235 0511
Fax: 020 7235 4696
Email: mail@cla.org.uk
www.cla.org.uk

© Country Land and Business Association Limited 2021
Registered in England and Wales No: 6131587 at the above address

All rights reserved. No part of this publication may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature without prior written permission of the copyright holder except as expressly permitted by law.



WHO WE ARE

Founded in 1907, the CLA is the membership organisation for owners of land, property and businesses in rural England and Wales. We exist to champion, protect and enhance our rural economy, environment and way of life.

Our aim is to unlock the potential of the rural economy by promoting innovative ideas to a national audience and providing practical support to members. We do this so our members can feed the country, create jobs and prosperity, invest in communities and protect the environment for future generations.

Together, CLA members own and manage around half the rural land in England and Wales and more than 250 different types of businesses. The work they undertake in the best interests of the land has a positive effect on wildlife and the natural environment, and their diverse and successful businesses are the heart of rural communities.

The CLA's formal, incorporated name is the Country Land and Business Association Limited, and its registered office is at 16 Belgrave Square, London SW1X 8PQ.

A CLA Water Strategy: a vision for the water environment to 2030

CONTENTS

	Page
Foreword	6
1. Introduction	7
1.1 Water matters for rural businesses and the environment	7
1.2 Water rights and responsibilities	7
1.3 Developing the priorities	7
2. The CLA vision	9
2.1 Supporting the wider water environment with a natural capital approach	9
3. Making it happen – key points	11
3.1 Drought and water availability	11
3.2 A thriving water environment	11
3.3 Flood resilience	11
4. Drought and water availability	12
4.1 The case for action	12
4.1.1 Addressing water security for rural businesses	13
4.1.2 The abstraction system must support food production and the environment	15
4.1.3 Private water supplies are an essential service in rural communities	16
4.1.4 National infrastructure	18
4.2 Solutions that work	19
4.3 CLA recommendations	20
4.3.1 Abstraction and drought	20
4.3.2 Private water supplies	20
4.3.3 Water storage	20
4.3.4 National infrastructure	20
5. A thriving water environment	21
5.1 The case for action	21
5.1.1 Tackling diffuse pollution requires action by everyone	21

5.1.2	There is more work to do on awareness of water quality actions	23
5.1.3	Catchment management will build natural capital	23
5.1.4	New agricultural pollution regulations in Wales	24
5.2	Solutions that work	25
5.3	CLA recommendations	26
5.3.1	Regulation, advice and guidance	26
5.3.2	Actions for farming	26
5.3.3	Monitoring and targets	26
6.	Flood resilience	27
6.1	The case for action	27
6.1.1	Flood risk can be mitigated through collaboration	27
6.1.2	Protecting local communities from flooding is a public good	28
6.1.3	Maintenance of flood defence assets and rivers should be a priority	29
6.1.4	Coastal erosion and storm surges are becoming increasingly likely	30
6.2	Solutions that work	31
6.3	CLA recommendations	32
6.3.1	Landowner responsibilities	32
6.3.2	Flood defence assets	32
6.3.3	Catchment-focused flood risk work	32
7.	Summary of recommendations	33
8.	Appendix 1: Regulatory framework for water management in England and Wales	37
8.1	Legislation and policy	37
8.2	European Commission Directives transposed into the legislation of England and Wales	38
8.3	Regulatory bodies	38
9.	Appendix 2: Further information	39

FOREWORD

What should our water environment look like in ten, twenty, thirty years? I think we all know what we would like to see: clean rivers where wildlife is able to flourish, plenty of water in our rivers and aquifers for all those who need it, and well-managed river catchments that reduce flood risk for those both upstream and downstream. A healthy water environment is valuable natural capital across England and Wales, and looking after it well provides a quintessential public good. With the new Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales being developed and rolled out over the next few years, now is the perfect time to look at how farmers and landowners can be at the heart of water policy.

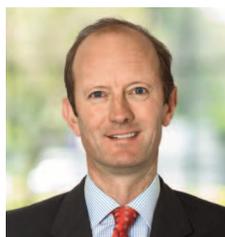
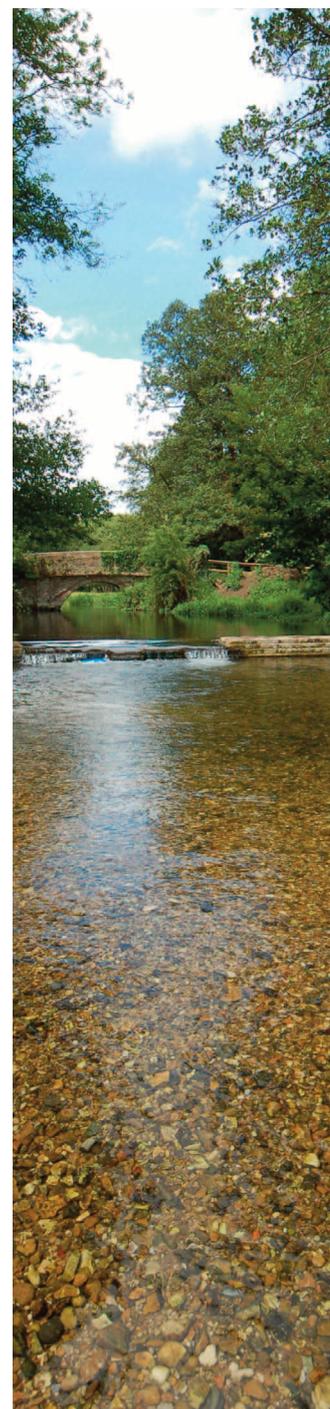
Unfortunately, in recent years there have been all too many crisis points related to water – whether it is pollution incidences in our rivers, “once in a lifetime” floods happening yearly, or long periods of hot, dry weather damaging crops, impacting livestock and threatening the water security of rural businesses. Climate change and population growth will only place more pressure on the water environment.

There is no escaping the interconnectedness of water and farming, but water use does not start and end with farming: rural businesses are increasingly using water for tourism operations, hospitality enterprises, food processing, and to provide household water to rural communities. The rural sector is being increasingly called upon to play its part in improving the water environment, managing land in a way that protects houses and businesses from flooding, produces food in drought conditions and reduces impacts on water pollution.

While the industry is ready and willing to act, we need supportive action from the Government, local authorities across England and Wales, environmental groups and water companies.

This CLA policy report – *A CLA Water Strategy: a vision for the water environment to 2030* – focuses on how CLA members can contribute to the stewardship of the water environment across England and Wales, supporting businesses and communities. We look at all the considerations for landowners in both dry and wet weather: drought and water availability, water quality and the environment, and flood resilience.

This report is a call to action for farmers and landowners, demonstrating how pivotal we are to ensuring we have a thriving water environment, but also a call to Government to make sure future agriculture and environmental policies support these actions through fair regulation, well-thought-out policies, adequate funding options and facilitated collaboration.



Mark Bridgeman
CLA President

1. INTRODUCTION

1.1 Water matters for rural businesses and the environment

The CLA is involved in many aspects of water policy in support of our members. Water has been under increasing scrutiny over the years, beginning with the EU Water Framework Directive introduced in 2000. The concept of “clean and plentiful water” is now at the heart of the public money for public goods agenda. With climate change and population growth placing increasing pressure on our water environment, agriculture and land use have a big part to play in ensuring resilience of supplies in dry weather, protecting water quality, and in helping to manage increasingly unpredictable rainfall and flooding risk.

New regulations and policies, particularly the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales, will drive environmental improvements and business resilience, and must support farmers and landowners in meeting the challenges ahead. This report outlines the priority actions CLA recommends in order to help landowners and land managers deliver a healthy water environment.

1.2 Water rights and responsibilities

Water is a vital resource for farmers and landowners. There are many regulatory controls, and increasingly, farmers and landowners are expected to deliver a range of environmental and social public goods related to water.

Landowners have a number of rights and responsibilities when it comes to water management that provide important context for the points raised throughout this report. These include the following.

- Where a land boundary is next to a watercourse, landowners own the land up to the centre of the watercourse. A watercourse is defined as any natural or artificial channel through which water flows, such as a river, brook, beck, ditch, stream or culvert.
- Landowners have a licence of right to access water that flows through or under their land, as long as it is for their own use and they do not take more than 20 cubic metres per day.
- Landowners have an obligation to ensure free flow of water that flows through their land, prevent pollution, maintain riverbeds and banks, and protect wildlife.
- Landowners have the right to protect property from flooding and erosion.

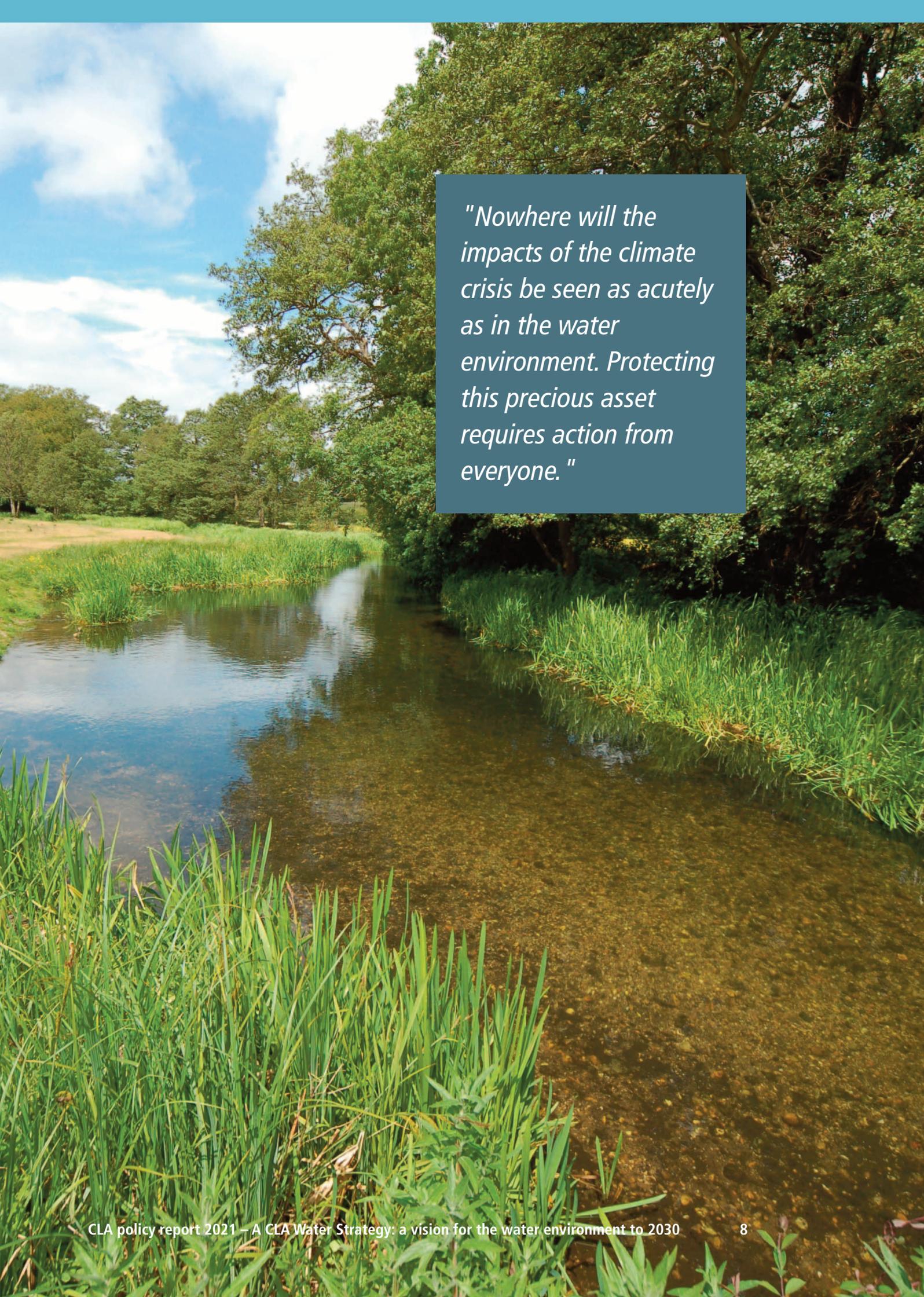
The water environment is regulated through a number of pieces of legislation, policy instruments and regulatory bodies. See Appendix 1 for a full list.

1.3 Developing the priorities

This report is the result of a consultation programme with CLA members on future water policy priorities, undertaken during the spring and summer of 2020.

It presents the findings of the consultation and identifies the priority areas for policy change to enable rural land-based businesses to play their part in delivering responsible water management.

“Water is a vital resource for farmers and landowners.”



"Nowhere will the impacts of the climate crisis be seen as acutely as in the water environment. Protecting this precious asset requires action from everyone."

2. THE CLA VISION



The CLA's vision is that by 2030 rural land-based businesses have reliable access to water supplies for their current and future needs, are resilient to the risk of flood, and drought, and recognised for their stewardship of water quality and resources.

The evidence is clear: water is going to become an increasingly unpredictable resource and the demands of society for clean water and a thriving water environment mean that change is needed. Clean and plentiful water in well-managed catchments is a fundamental principle.

The CLA's vision will ensure we prioritise the right actions in the short term, providing a critical foundation for the long-term security of farming and the environment.

2.1 Supporting the wider water environment with a natural capital approach

While this policy report – *A CLA Water Strategy: a vision for the water environment to 2030* – identifies actions for water in three discrete sections – drought and water availability, a thriving water environment and flood resilience – they are all inextricably linked and have relevance to the wider environment. None can be viewed in isolation.

A useful way to understand how they interact is by considering water through a natural capital lens. We rely entirely on water for life, and the natural capital provided by a healthy water environment in turn supports social, human, physical and financial capital.

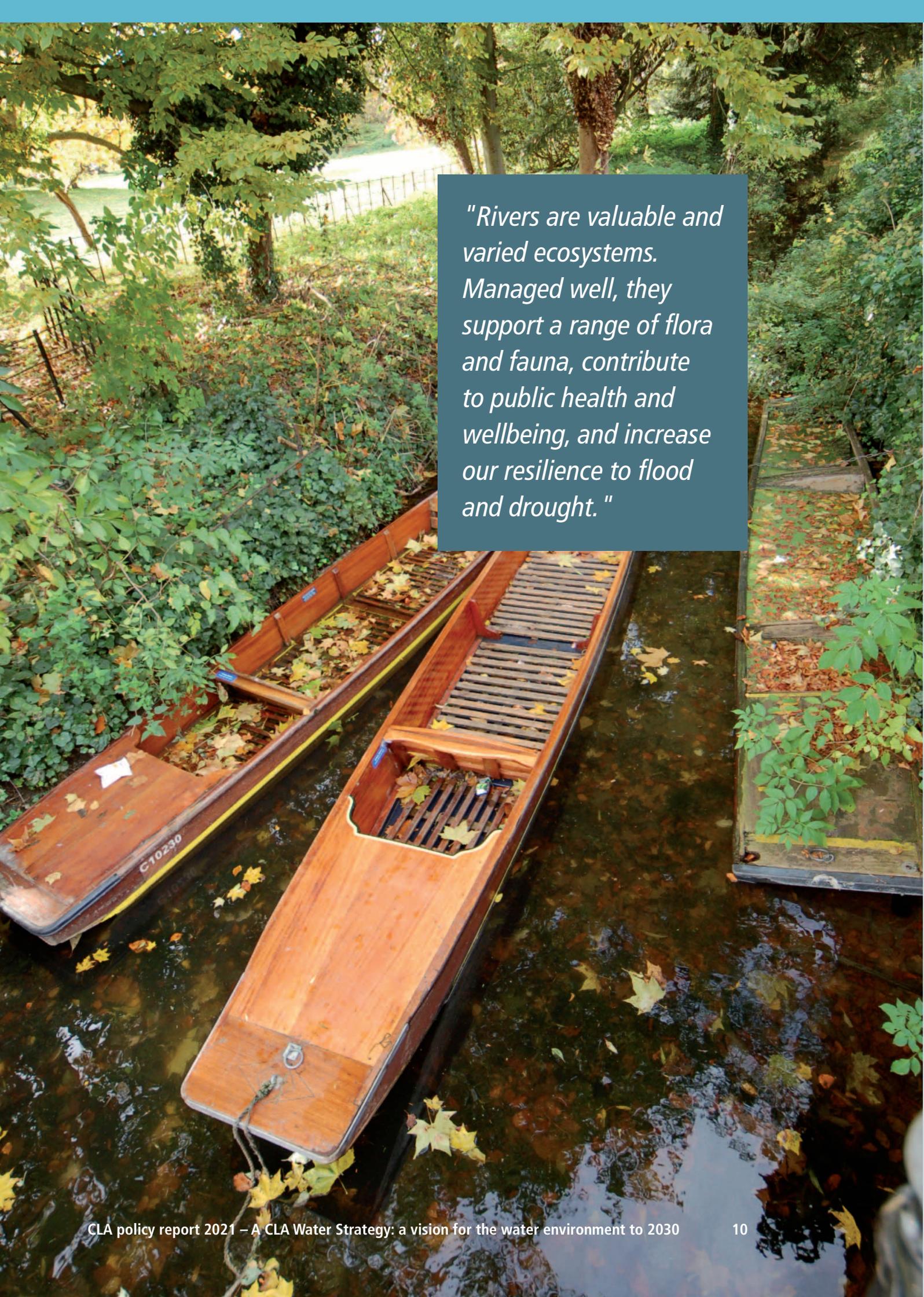
By looking at water with a holistic, catchment-based approach, the right solutions can be identified, particularly those that have multiple co-benefits for both water quality and availability, increase resilience to flood and drought whilst improving biodiversity and working towards the Government's climate change targets. Achieving the ambitions set out in this CLA report will require actions for farmers, landowners, the Government, water companies, local authorities, flood risk groups, internal drainage boards, water resources groups, environmental organisations and others, aiming to support and promote collaboration across sectors.

Our report demonstrates how the management of water and the stewardship that land managers provide over the water environment are truly public goods, and therefore should be at the heart of the future Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales.

It also aligns with the United Nations' *Making Peace with Nature*¹ global blueprint for tackling the climate, biodiversity and pollution emergencies.

“Given the interconnected nature of climate change, loss of biodiversity, land degradation, and air and water pollution, it is essential that these problems are tackled together now. Sustaining freshwater in the context of climate change, rising demand, and increased pollution involves cross-sectoral and sector-specific interventions at the watershed or river basin scale. This can be achieved by simultaneously increasing water-use efficiency, wisely expanding storage, reducing pollution, improving water quality, minimizing disruption and fostering the restoration of natural habitats and flow regimes.” *UN Environment Programme, February 2021*

1. United Nations Environment Programme (2021), *Making Peace with Nature*, Nairobi: UNEP. <https://www.unep.org/resources/making-peace-nature>



"Rivers are valuable and varied ecosystems. Managed well, they support a range of flora and fauna, contribute to public health and wellbeing, and increase our resilience to flood and drought."

3. MAKING IT HAPPEN – KEY POINTS

The CLA's detailed recommendations on the water environment are explored throughout this report. Here we outline our key recommendations across drought and water availability, a thriving water environment, and flood resilience.

Drought and water availability

The impacts of climate change are already apparent, with the increasing frequency of dry weather and droughts. Building resilience to variable water supplies for farming and rural businesses is essential for future food supplies and to protect the environment.

The CLA calls on the Government to:

- a) increase funding for on-farm water storage solutions, rainwater harvesting and investment in efficient irrigation technology;
- b) promote a sustainable, flexible abstraction licencing system that considers “water for food” as an essential use of water;
- c) provide compensation where permanent abstraction licences are removed;
- d) increase support for private water supply owners; and
- e) implement a national infrastructure programme for water storage and water transfer to ensure that there are sufficient supplies for all water users.

A thriving water environment

Clean water in our rivers and aquifers should be non-negotiable. Rivers are valuable and varied ecosystems that support a range of flora and fauna and contribute to health and well-being. Pollution incidents are all too frequent from farming, and despite some improvements, diffuse water pollution from agriculture is still a problem. Progress on water pollution must be accelerated.

The CLA calls on the Government to:

- a) prioritise a grant programme to update infrastructure including slurry storage;
- b) expand the successful Catchment Sensitive Farming and Farming Connect programmes of advice and grants; and
- c) provide attractive incentives for actions for clean water built into the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales.

Flood resilience

Flooding has enormous social and economic costs to all parts of society. Reducing the risk of flooding and mitigating the impacts must be a priority. Farmers and landowners are in a position to support the prevention and management of flooding through nature-based solutions.

The CLA calls on the Government to:

- a) fund consistent maintenance of flood defence infrastructure and main rivers;
- b) promote natural flood management projects with compensation where the project takes agricultural land out of production; and
- c) empower landowners to undertake flood defence repairs, where appropriate.

4. DROUGHT AND WATER AVAILABILITY

4.1 The case for action

2020 was one of the hottest years on record, building on the temperature records broken in the summers of 2018 and 2019. The Met Office predicts these weather patterns will continue, with all areas of the UK projected to continue getting warmer. Over the next 30 years, hot summers will be more common, and hot spells of temperatures higher than 30°C for two or more consecutive days will become more frequent².

Combined with an estimated population increase of six million people in England and Wales by 2043, this will place increasing pressure on our water security. The Environment Agency (EA) published a report indicating that many areas of England will likely face water shortages by 2050, with Natural Resources Wales (NRW) indicating that Wales is subject to similar concerns³.

Climate change and population growth will mean that the way we currently manage our water resources will no longer be sustainable. A new, more holistic approach is needed to increase resilience across England and Wales to drought and dry weather.



- Spring 2020 was the sunniest UK spring since records began in 1929
- Temperatures reached 36.4°C in summer 2020
- April 2021 was one of the driest April months in the UK since records began in 1929
- May 2020 was the driest May since records began in 1929 for the UK
- July 2019 saw the highest-ever recorded temperature in England – 38.7°C – since records began in 1904
- The UK is on track for temperatures to be 7.4°C hotter than current temperatures by 2050

Source: The Met Office

WHY IS WATER SO IMPORTANT?



£10b

Irrigated crops and horticulture



£15b

Livestock



£13b

Rural tourism and hospitality



£28b

Food and drink manufacturing



£152b

Private water supplies

Water is vital to support the rural economy, which in turn adds great value to UK GDP. Farmers and land managers largely rely on rainfall for their farm businesses, but many also need to abstract water under a licence, usually for irrigating crops and food processing. Many farms do not have access to mains water so rely on private water supplies for livestock, domestic use or other rural properties. In short, secure and reliable access to water is absolutely critical for food production and processing.

2. Met Office (2019), *UK Climate Projections: Headline Findings*: <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp-headline-findings-v2.pdf>

3. Environment Agency (2020), *Meeting our Future Water Needs: A National Framework for Water Resources*, Bristol: Environment Agency <https://www.gov.uk/government/publications/meeting-our-future-water-needs-a-national-framework-for-water-resources>

4.1.1 Addressing water security for rural businesses

Secure water supplies and building resilience to changeable weather is fundamental for rural businesses. This is particularly important where there is no access to mains supplies, where dry weather can impact on crop yields or livestock welfare, or where irrigation is needed for high-value crops. Investment in water storage solutions, technology and land management practices will reduce losses and protect the environment.

On-farm water reservoirs. On-farm water reservoirs for irrigation support high-value crop production (particularly reliable supplies of fruit and vegetables) reducing waste and the farm carbon footprint. They deliver a wealth of other benefits by supporting local wildlife, often mitigating flood risk by holding back flood water, and providing recreation or amenity benefits.

Rainwater harvesting systems. Rainwater harvesting systems collect water from the roofs of farm buildings or greenhouses and store it in a tank or pond. This water can then be used for livestock drinking, washing down yards or irrigating crops. If used as an alternative to mains water, they can greatly reduce water bills as well as provide access to soft, unchlorinated water which is often preferable for both livestock and crops.

Irrigation efficiency techniques. Irrigation efficiency techniques like precision irrigation or trickle irrigation help farmers save water and money, and reduce the risk of runoff. They will also contribute to a lower carbon footprint. Investment in technology to monitor water use and accurate irrigation, along with modern irrigation equipment and infrastructure, will reduce leaks and losses.

Land management practices. Land management practices that improve soil health are the unsung heroes of drought resilience and flood prevention. Actions that increase soil organic matter and improve soil structure will increase water holding capacity, while also reducing soil erosion and flood risk, and increase stores of carbon. Using cover crops, min-till or no-till, and good grazing management practices all help improve soil health.

These solutions can greatly help tackle rural water security and demand pressures, and meet a projected 40% increase in demand for water for agricultural irrigation by 2050 across England and Wales⁴. Some are relatively simple, but the speed and scale of adoption could be increased with incentives through Government environmental and productivity grants.

4.1.1.1 On-farm water reservoirs

On-farm reservoirs have the potential to increase water availability for farmers and reduce demands on groundwater and rivers. The CLA estimates that another 300-600 on-farm reservoirs are needed across England and Wales to meet the projected increase in agricultural demand⁵. However, on-farm reservoirs are extremely expensive and the planning process can take years to navigate successfully. These barriers must be overcome if on-farm reservoirs are to be built at the scale needed.

Costs of on-farm reservoirs are typically between £70,000 to £1.2 million, with associated irrigation and pumping infrastructure often doubling that cost. Even for high-value horticulture crops, this cost can be prohibitive making on-farm

"The UK has a reputation for being a wet, rainy nation. This perception is wrong."

Sir James Bevan, Chief Executive, Environment Agency, 2020

"Climate change and population growth will mean that the way we currently manage our water resources will no longer be sustainable."

4. Ibid.

5. Ibid.

Case study: Euston Estate, Suffolk

Nowhere are the impacts of climate change becoming more apparent than the East of England. The team at Euston Estate in East Anglia, led by CLA member Andrew Blenkiron, is well-versed in the challenge of getting water when it is needed and has been actively taking steps to increase their resilience through water storage for over a decade.

Euston Estate is a 4,249-hectare arable farm where, 13 years ago, a 455,000 cubic metre clay-lined reservoir was built to supplement the water supply from a borehole. This was followed by another 364,000 cubic metre reservoir. The second of these reservoirs would not have been possible without grant funding through the Countryside Productivity Scheme, with planning holdups meaning the first had to be funded in-house, after the grant aid deadline was missed.

These reservoirs and the associated irrigation infrastructure cost in excess of £2.5 million without grant funding, a significant sum. Andrew was keen to ensure these reservoirs were as sustainable as possible, undertaking environmental impact assessments, risk management work and ensuring the reservoirs were clay-lined. Despite this commitment, the planning process still threw plenty of hurdles in the way, particularly when a 16th century brick kiln was discovered in the middle of the proposed site, and further holdups as a result of having to check for the existence of great-crested newts. All this cost another £120,000 and delayed the project by years. This demonstrates the importance of ensuring the planning system is as streamlined as possible to avoid unexpected costs and hurdles.



reservoirs only viable with Government grant funding. The new Farming Investment Fund – due to open to applicants in England in late 2021 – is an opportunity to fast-track investment in on-farm reservoirs. This will provide the foundation for expansion of the fruit and vegetable sector and will deliver associated environmental benefits. This funding needs to be in place for at least five to ten years to allow businesses time to build into their future plans and allow for investment at scale with collaboration between landowners. The planning process should also be improved to support these changes with as many projects as possible using available permitted development rights to speed up both decision-making and delivery on the ground. For those proposals that require full planning permission, we strongly commend the use of the two-stage Permission in Principle (PiP) process whereby an in-principle decision is provided at the first stage, before high expenditure on detailed plans is made at the second stage. Pushing up-front costs back to the second stage of the PiP process would help to de-risk the process and could unlock new investment in on-farm reservoirs.

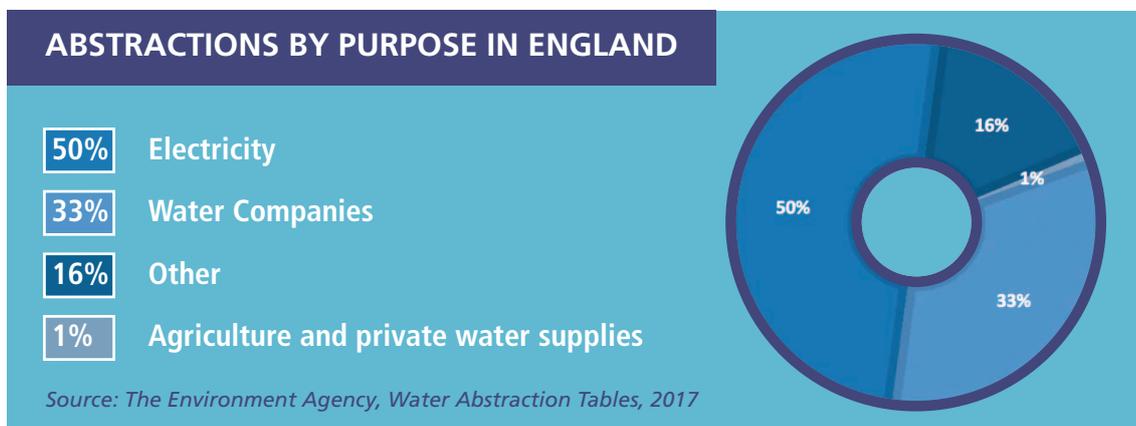
4.1.1.2 Reservoir safety

The Reservoirs Act 1975 sets out the safety requirements for owners of reservoirs and requires owners of “large raised reservoirs” to register them and appoint specific engineers for construction. The Department for Environment, Food and Rural Affairs (Defra) has been undertaking a review of reservoir safety and is considering reducing the threshold for large raised reservoirs in England from 25,000 cubic metres to 10,000 cubic metres, the current threshold in Wales. This may impose increased costs and an administrative burden disproportionate to any potential risk posed by on-farm reservoirs, and considering their high safety record.



4.1.2 The abstraction system must support food production and the environment

Farmers and land managers abstract water from rivers, lakes, canals, reservoirs or groundwater, amounting to around 119 million cubic metres in England⁶. This equates to just 1% of total abstracted water. Despite the small amount of water taken, farmers and land managers hold 69% of total abstraction licences in England for agriculture, spray irrigation or private water supplies. This increases to 85% of licences in the East of England, where many high-value irrigated crops are grown⁷.



6. Defra (2019), *Water abstraction statistics: England, 2000-2017*: <https://www.gov.uk/government/statistics/water-abstraction-estimates>

7. Licences for "spray irrigation", "agriculture" and "private water supplies".

A number of catchments across England and cross-border with Wales are over-abstracted, damaging the local water environment and placing increasing pressure on those who rely on that water. During dry periods, those who use spray irrigation are often the first to have licences restricted through the Water Resources Act 1991.

The system for managing abstraction was introduced in the 1960s with abstractors given a licence to take a fixed volume of water, subject to potential restrictions either through conditions on the licence or through regulation. Both the UK and Welsh Governments have acknowledged that this system is no longer fit for purpose⁸, and are in the process of reforming the abstraction licencing system. The reforms include:

- updating it from a paper-based system;
- reducing the impact that some older licences may have on the environment; and
- allowing for greater flexibility to cope with competing demands.

Part of these reforms involve looking specifically at over-abstracted catchments and assessing innovative ways to manage abstraction in these areas.

A graphic with a dark blue vertical bar on the left containing three white wavy lines representing water. To the right, a dark blue header contains the text 'WATER ABSTRACTION RIGHTS' in white. Below the header, a light blue box contains three paragraphs of text in dark blue.

WATER ABSTRACTION RIGHTS

An abstraction licence is required where more than 20 cubic metres of water is taken per day.

Permanent abstraction licences are business assets and property rights, adding value to land and providing options for business growth and diversification.

Removal of these licences has significant impacts on rural businesses and food production. They must not be revoked or changed without compensation.

4.1.2.1 Collaboration within and across catchments is key

The CLA is supportive of the planned reforms to the abstraction licencing system, particularly those aimed at increasing flexibility within the system and developing a stronger catchment focus, however, it is pivotal they prioritise water for agriculture throughout the process. A flexible abstraction licencing system should allow for sharing and trading of water resources and react quickly to changing water availability patterns. This cannot and will not happen without strong collaboration between all sectors and water users. The CLA supports this work through our engagement with the Catchment Based Approach, regional water resources groups, and the industry-led Water for Food group. More work is needed at local level to work with individual farmers and landowners.

4.1.3 Private water supplies are an essential service in rural communities

There are over 100,000 private water supply systems in rural areas of England and Wales. Private water supplies provide drinking water for households and often whole villages where mains water is not available. They are common on many farms and estates, and the water may be used for

8. Defra (2020), *Water Abstraction Plan*: <https://www.gov.uk/government/publications/water-abstraction-plan-2017/water-abstraction-plan>

farming operations or businesses and domestic households. If more than 20 cubic metres per day is taken for a private water supply, an abstraction licence is required.

Private water supplies are threatened by climate change and extreme weather events which could impact rural households and communities if there is no mains alternative. Planning for the future is difficult for those responsible for private water supplies. This could be improved through greater access to local hydrological data and understanding of other demands.

4.1.3.1 Owners have a responsibility to ensure private water supplies are safe and reliable

Private water supplies come with significant responsibilities for domestic usage to ensure they are reliable and safe to drink, monitored regularly and subject to risk assessments. The local authority can charge fees for risk assessments and can apply penalties if the owner fails to meet the drinking water standard. Owners are responsible for registering the supply with the local authority, installing appropriate equipment and taking actions to maintain the quality. The fees and upgrades to meet standards can be costly, and are unavoidable where connections to mains water is not possible or prohibitively expensive.

Owners are also under the same obligation as water companies to ensure drinking water is always available and of the correct standard, however, most individual landowners do not have the same power to limit consumption or have the resources to investigate local hydrology for alternative supplies. For this reason, it is important that owners of private water supplies are supported through Government grant schemes to provide certainty and security of supply, and that fees to audit the water quality are proportionate to the risk.

Case study: Englefield Estate, Berkshire

Englefield Estate in Berkshire is a diverse 5,660-hectare estate run by CLA member and Estates Director Edward Crookes. It includes farmland, woodland, residential and commercial property and rural tourism enterprises. The village of Englefield lies at the heart of the Estate and is reliant on a large private water supply sourced from a borehole linked to a Victorian-era reservoir and a modern treatment plant managed by the Estate. The whole community of more than 100 homes, the village school, a tea room, commercial units, and farms depend upon this water supply.

Currently, Englefield has an abstraction licence that provides just enough for the local community. However, this licence is likely to be reduced by 10,000 cubic metres per day by 2028, meaning Englefield could be faced with water shortages if action is not taken.

With this in mind, Edward and his colleagues have been investigating options to reduce total water consumption and increase the Estate's long-term resilience. They have been installing monitoring equipment, at significant expense, have updated the emergency plan, are rolling out meter installations in the residential properties and regularly communicate with the residents about the need to save water.



4.1.4 National infrastructure

As the 2020 Met Office climate maps demonstrate, we are already seeing a change to water availability in England and Wales. Water companies, energy companies, fish and cress farming and even amenity ponds and lakes account for over 90% of total abstracted water. With all these demands, investment in national infrastructure is needed to ensure more water is available for all sectors at the right time and in the right place, ultimately reducing pressure on the environment.

The National Infrastructure Committee has recommended a twin track approach to reduce pressure on water supplies: demand management (including leakage reduction) and long-term investment in supply infrastructure to save 4,000 million litres per day⁹.

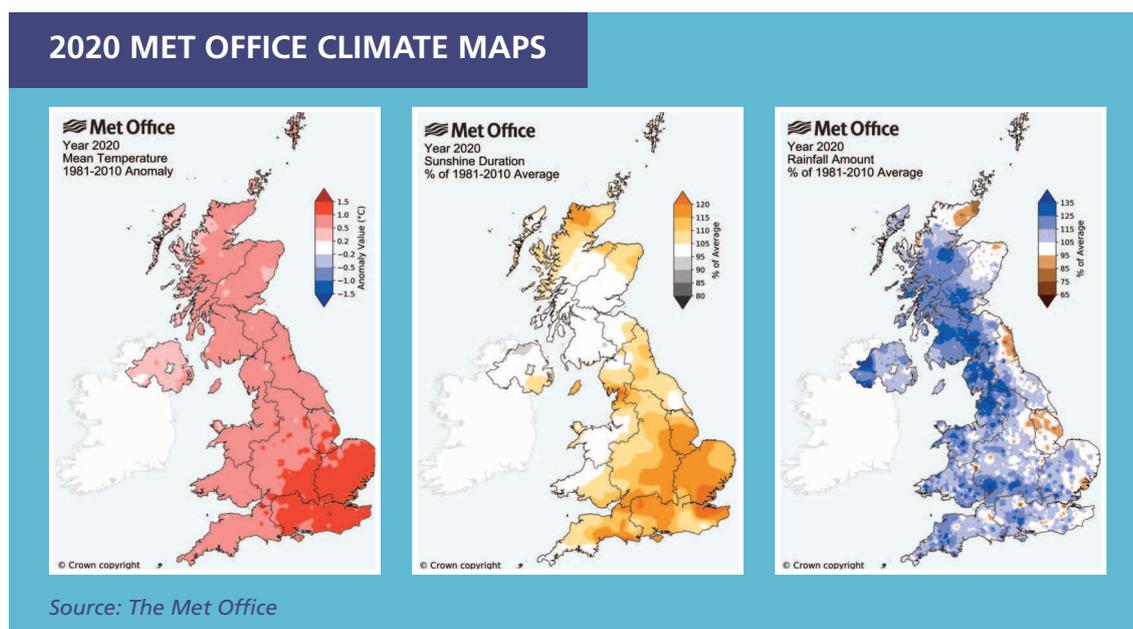
Nationally significant water reservoirs. It is critical that large, nationally significant water reservoir infrastructure is funded. While in some cases it may require vast tracts of land, research into potential siting and consultation with local landowners can help overcome these barriers.

Water transfer networks. Water transfer networks, either below ground in pipes, or above ground through the canal or river system, have significant potential to help alleviate water pressures in areas where water is scarcer, from areas where it is plentiful.

Other options. Water reuse and desalination are other options that have been identified for potential water savings. For farmers and landowners, this may involve reusing water for irrigation. Desalination makes use of seawater, but currently is energy intensive.

The planning system currently makes it difficult for these projects to establish. For large reservoirs, for example, it can take more than ten years for the permissions, planning, development and construction of the reservoir to take place. While water companies must plan for long-term water resource use, there is no requirement to consider other options like water transfers.

“Investment in national infrastructure is needed to ensure more water is available for all sectors at the right time and in the right place.”



9. National Infrastructure Commission (2018), *Preparing for a drier future: England's water infrastructure needs*: <https://nic.org.uk/app/uploads/NIC-Preparing-for-a-Drier-Future-26-April-2018.pdf>.

4.2 Solutions that work

Water resources groups and catchment collaboration

Climate change and population growth threaten water supplies for all sectors – not just agriculture. The Environment Agency (EA) estimates that “if no action is taken between 2025 and 2050 around 3,435 million extra litres of water per day will be needed for public water supply to address future water pressures”. A National Framework was launched in 2020 by the EA, aiming to improve national resilience by pushing for collaboration across sectors. There are five regional groups – Water Resources North, Water Resources West, Water Resources East, Water Resources South East, West Country Water Resources – made up of water companies in England and Wales and other users of water, including agriculture and land use.

These regional groups are mandated to come up with a plan to meet future water needs. The CLA has been actively engaging with these groups to ensure our members’ interests are represented. However, individual farmers must be engaged with, through meetings, accessible information, and options at farm level to understand more about climate impacts, local hydrology and water demands.

In addition to the water resources groups, the EA has been working with the Catchment Based Approach (CaBA) to identify Priority Catchments where collaborative solutions to water resource needs can be found. This might mean trialling a flexible abstraction licencing system, making water trading easier and faster, aggregating licences or using online river flow data to plan water use.

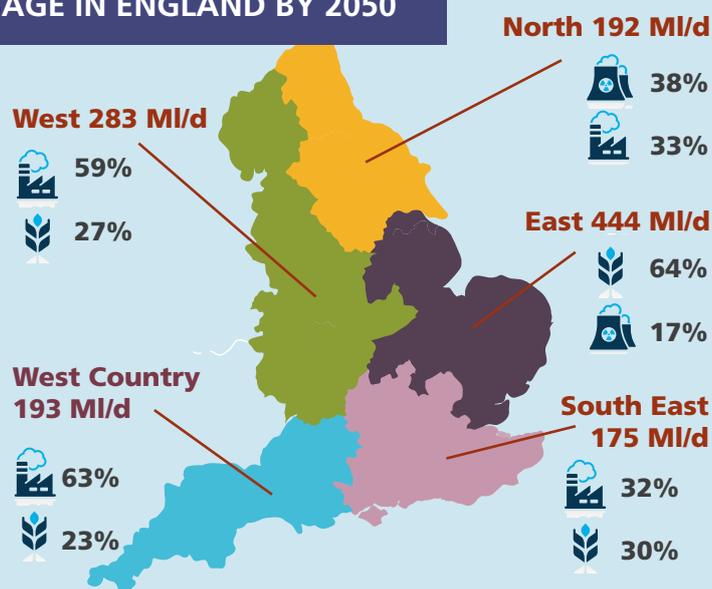
The CLA sits on the CaBA Abstraction Working Group to ensure the agriculture sector has its voice heard in these programmes and pilots. The work in the Priority Catchments is extremely promising, so we will be pushing for much of it to be rolled out further throughout the country.

ESTIMATED WATER USAGE IN ENGLAND BY 2050

The Environmental Agency estimated how much water in total other users in each region will need at 2050 and which sectors will use the most (excludes public water supply).



Source: Environment Agency



4.3 CLA recommendations

Land managers and rural businesses need to build resilience to the changing climate by planning ahead and looking to secure their current and future water needs in innovative ways. Government funding, advice and guidance – alongside cross-sector collaboration – will become increasingly important to support those actions that happen on the farm.

The CLA recommends action is taken in the following areas.

4.3.1 Abstraction and drought

The CLA calls on the Government to:

- a) require Defra, the Environment Agency (EA) and Natural Resources Wales (NRW) to include water for crops and livestock as an essential use of water in the National Drought Plan and in the abstraction plan, given that holistic, catchment-focused water management is a necessity;
- b) work with water resources groups to find better ways of engaging all landowners in the collaborative process to agree sustainable, flexible abstraction plans;
- c) provide information and guidance on water projections at a farm level to help with water management planning;
- d) match-fund grants through the Farming Investment Fund in England and the Farm Business Grant in Wales to promote water saving and technology for efficient irrigation systems; and
- e) pay compensation when permanent abstraction licences are revoked or changed.

4.3.2 Private water supplies

The CLA calls on the Government to:

- a) ensure that local authorities charge administrative costs that are proportionate for small private water supply owners;
- b) provide support for private water supply owners to manage demand and improve water quality, for example, through Government grant schemes for water meters or new piping; and
- c) assist with funding to support private water supply resilience, through grants for hydrological surveys, water reservoirs, deeper wells or to look at the feasibility of connecting to mains.

4.3.3 Water storage

The CLA calls on the Government to:

- a) ensure Government productivity grant schemes in England and Wales include continued grant funding over the next three years to cover at least 40% of the cost of on-farm reservoirs and associated infrastructure;
- b) require planning authorities to provide certainty to landowners and ensure a streamlined planning process for on-farm water infrastructure with Permission in Principle (PIP) to avoid unnecessary costs;
- c) introduce grant funding through agricultural productivity schemes for smaller-scale projects to increase water use efficiency such as rainwater harvesting; and
- d) maintain the definition of a “large raised reservoir” in England at 25,000 cubic metres under the Reservoirs Act 1975 as it is appropriate for the risk posed.

4.3.4 National infrastructure

The CLA calls on the Government to:

- a) implement a national infrastructure programme for water storage and water transfer to ensure that there are sufficient supplies for all water users.

5. A THRIVING WATER ENVIRONMENT

5.1 The case for action

Good water quality is pivotal to biodiversity, ecosystems, human consumption and public enjoyment of water courses and the habitats that rely on groundwater. Clean, healthy and well-managed water courses are a key goal of the 25 Year Environment Plan and should be a non-negotiable priority for landowners, particularly as these habitats are vulnerable to climate change. Unfortunately, in England and Wales there is a poor track record when it comes to water quality, with no water courses in England meeting “good status” in 2020 and just 16% in Wales in 2015 (achieved when both ecological and chemical status are at least “good”)¹⁰.

“Clean, healthy and well-managed water courses should be a non-negotiable priority for landowners.”

The scale of the diffuse pollution problem means that every sector, every individual and every business must take action to reduce what is getting into our waterways.

5.1.1 Tackling diffuse pollution requires action by everyone

Agricultural practices must change to protect water quality. There have been big strides in addressing point source and diffuse water pollution from agriculture in recent years but there is still work to do to address the impacts of fertilisers, slurries and manures, pesticides and soil erosion. Nitrogen usage has fallen by more than a third in England and Wales since the 1980s, and phosphate usage has halved. However, the Environment Agency (EA) estimates that agriculture and rural land management activities are still responsible for 31% of the reason water bodies do not achieve good status, and agriculture is the largest sector responsible for significant pollution events¹¹.



10. 86% of watercourses failed to meet “good ecological status” under the Water Framework Directive in 2016 and no watercourses met “good chemical status” in 2020. Both must be met for the watercourse to be defined as “good”. Ecological status is defined based on the biological quality, chemical and physico-chemical status, presence of specific pollutants and hydromorphological quality. Chemical status is defined based on the concentrations of priority substances and hazardous substances in the Environmental Quality Standards Directive. Source: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/709493/State_of_the_environment_water_quality_report.pdf and <https://environment.data.gov.uk/catchment-planning/>
11. Environment Agency (2018), *The state of the environment: water quality*: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/709493/State_of_the_environment_water_quality_report.pdf

Many actions that reduce water pollution have co-benefits for biodiversity and climate change and can increase resilience to flood and drought so, in many cases, taking action to improve water quality is really a win-win for the land use sector.

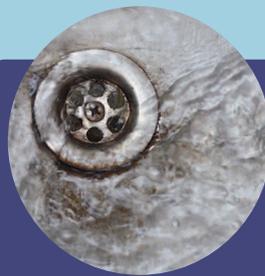
Other sectors must also do their part. Sewage pollution is a significant problem, water companies in England released raw sewage into rivers more than 400,000 times in 2020, a 37% increase on 2019¹². The CLA supports calls to #EndSewagePollution. Landowners across England and Wales are taking action to ensure they do not contribute to this problem, upgrading septic tanks to costly new sewage treatment plants to meet the new regulations and improving local water bodies.

COMMON SOURCES OF WATER POLLUTION IN ENGLAND AND WALES



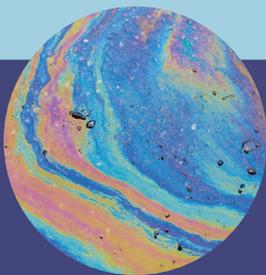
Agriculture

- Manure and slurry runoff
- Pesticides and fertilisers
- Soil erosion



Consumers

- Plastic
- Fat
- Chemicals
- Wet wipes



Industry

- Chemical leaks
- Oil leaks



Water Companies

- Sewage leaks
- Urban runoff

12. Defra (2020), *Event Duration Monitoring - Storm Overflows*. <https://environment.data.gov.uk/dataset/21e15f12-0df8-4bfc-b763-45226c16a8ac>

5.1.2 There is more work to do on awareness of water quality actions

For farmers and land managers, investment in farm infrastructure to reduce pollution risk often has no direct value to the business. There is also frequently confusion about regulatory requirements. In 2021, engagement with CLA members in England showed that just half were aware of the Farming Rules for Water and most had had no contact with the EA on water quality rules and regulations. Despite this, over half of these members had undertaken specific action to reduce soil erosion and risks of pesticides, fertilisers and slurry pollution.

For point source pollution, there needs to be clear and well communicated regulation and enforcement – bad practice cannot be condoned. The problem is more difficult for diffuse water pollution from agriculture where even best practice activities can result in an impact on water quality. The source of the pollution is often unclear, with lack of empirical data adding to lack of confidence in modelling.

CLA members are engaging in a number of land management practices to improve water quality. These include:

- improving soil health to increase water retention;
- using cover crops to prevent erosion;
- planting riparian buffer zones or large field margins to reduce soil erosion and leaching;
- reducing cultivations;
- reducing fertiliser and pesticide use; and
- ensuring septic tanks meet the regulations.

Many of these are incentivised through existing agri-environment schemes and it is essential these actions continue to be supported through the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales.

Capital investment in biobeds, fencing, pesticide handling facilities or slurry storage can also help protect water quality. Grants, advice and guidance through the Catchment Sensitive Farming programme (in England) and the Farming Connect programme (in Wales) have been very successful in reducing the impact of land management practices on water quality in high priority areas. These programmes must be maintained and expanded through future agri-environment schemes and grant funding, for example, the planned Slurry Investment Scheme, and flexible enough to encourage investment in other options outside farming, for example, sewage treatment plants.

5.1.3 Catchment management will build natural capital

The concept of clean water is absolutely central to natural capital, with the Natural Capital Committee defining natural capital as “that part of nature which directly or indirectly underpins value to people, including ecosystems, species, freshwater, soils, minerals, the air and oceans, as well as natural processes and functions”.

Taking a catchment-based approach and employing nature-based solutions will help realise the full benefits of clean water as natural capital. Nature-based solutions for water quality involve restoring ecosystems and using soft engineering options to reduce reliance on hard infrastructure interventions. This might mean creating wetland habitats or riparian woodland to reduce runoff and erosion while filtering pollutants before they reach the watercourse. At a catchment scale, often measures to manage water quality upstream can have flow-on benefits for water quality downstream.

Water companies are often looking to invest in or facilitate catchment-scale solutions as they can greatly reduce water treatment costs. A great example is South West Water's Upstream Thinking project. South West Water, alongside the local Rivers Trust and Wildlife Trusts, has been working with landowners across water supply river catchments to promote water friendly practices. This can involve tailored farm plans, soil management advice and testing, a pesticide amnesty, and capital grants for fencing or manure stores.

These types of solutions have great potential to protect our water environment and increase natural capital and are especially effective at a catchment scale. Farmers and landowners must be poised to take advantage of these opportunities.

5.1.4 New agricultural pollution regulations in Wales

In January 2021 new regulatory measures to address agricultural pollution in Wales were introduced, the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021. These new rules apply across the whole of Wales and focus on the storage and use of slurry, manure and inorganic fertilisers.

This type of blanket approach will have a significant impact on Welsh farmers, and affect the viability of many livestock farms. A more targeted approach, focussing on those areas with the highest incidences of agricultural pollution would be fairer and more efficient. Any sanctions, penalties and legal action should only be used as a last resort, with Welsh landowners given enough time, capital support, advice and guidance to ensure they can meet the regulations.

"Taking a catchment-based approach and employing nature-based solutions will help realise the full benefits of clean water as natural capital."



5.2 Solutions that work

Catchment Sensitive Farming and Farming Connect

The Catchment Sensitive Farming (CSF) programme in England and the Farming Connect initiative in Wales are examples of how training, guidance, quality advice and grant support for farmers and land managers can achieve water quality improvements.

CSF is a partnership between Defra, the Environment Agency (EA) and Natural England, offering free training, advice and support for grant applications for farmers and land managers. These are through workshops, demonstrations, farm walks, farm events and one-to-one advice from regionally-based farm advisers.

This programme is largely successful. The period between 2006-2018 showed 34% of England's farmed land was managed by CSF-engaged farmers and 87% of the 128,691 mitigation measures assessed as "mostly effective"¹³. Ultimately this has resulted in reduced agricultural pollutant losses, water quality improvements, and a reduction in pesticide, nutrient and sediment concentrations in water bodies.

Farming Connect is a Welsh service, funded through the Welsh Government Rural Communities – Rural Development Programme 2014-2020, aiming to improve resilience and promote transformational change in land management. The service provides knowledge transfer, innovation and advisory services across all elements of farming, environment and land management. Through the programme, these services are either fully funded or 80%-funded. Water is a key area of work, with funding for soil and nutrient management planning, slurry and manure management, and storage and farm infrastructure.

Water companies have a strong interest in helping farmers and land managers reduce pollutants from farming, particularly as some agricultural pesticides, like metaldehyde, are difficult to remove from water destined for human consumption. Catchment Sensitive Farming and Farming Connect have links with water companies and collaborate on projects with them, but equally, many water companies have in-house agricultural advisers and are able to signpost useful regional information.

"Farmers and land managers must take responsibility for their impact on water quality but need support from the Government and the private sector."



13. Natural England (2019), *Catchment Sensitive Farming Evaluation Report – Water Quality Phases 1 to 4 (2006-2018)* (NE731): [http://publications.naturalengland.org.uk/publication/4538826523672576#:~:text=This%20Catchment%20Sensitive%20Farming%20\(CSF,as%20identifying%20areas%20for%20improvement.&text=pollutant%20losses%2C%20water%20quality%20and%20ecology](http://publications.naturalengland.org.uk/publication/4538826523672576#:~:text=This%20Catchment%20Sensitive%20Farming%20(CSF,as%20identifying%20areas%20for%20improvement.&text=pollutant%20losses%2C%20water%20quality%20and%20ecology)

5.3 CLA recommendations

Farmers and land managers must take responsibility for their impact on water quality but need support from the Government and the private sector. This could be through a combination of clear, well-communicated regulation, worthwhile incentives and options for innovation. The Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales provide an opportunity to help solve these water quality issues in a way that enhances natural capital.

The CLA recommends action is taken in the following areas.

5.3.1 Regulation, advice and guidance

The CLA calls on the Government to:

- a) offer continued training, advice and grant support through the Catchment Sensitive Farming programme in England, and expand the Farming Connect initiative in Wales;
- b) review and simplify the Farming Rules for Water in England and Welsh guidance on NVZs, and better communicate them to farmers through improved engagement from the Environment Agency (EA) and Natural Resources Wales (NRW); and
- c) where costs are disproportionate, support through grant funding and advice from local authorities the upgrading of private water supplies or connection to mains supply.

5.3.2 Actions for farming

The CLA calls on the Government to:

- a) provide long-term, Government-matched grant funding for on-farm infrastructure and technology to reduce fertiliser, pesticide and slurry runoff, including slurry stores, precision agriculture and integrated pest management equipment;
- b) ensure the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales fund land management practices and nature-based solutions that support water quality improvements, particularly those with co-benefits for climate change mitigation and adaptation and biodiversity, such as riparian planting and soil management; and
- c) make sure future Government funding schemes aiming to improve water quality are designed to work in conjunction with potential private sector funding streams, for example, payments for ecosystem services or environmental markets, or water company initiatives.

5.3.3 Monitoring and targets

The CLA calls on the Government to:

- a) work with the industry to agree targets through the Environment Bill (due to become law in 2021) or any other regulation. These targets must be evidence-based and take into account different farm systems and regional, hydrological and geographic conditions to ensure they are achievable. The Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales should be the delivery mechanism; and
- b) ensure that the Environment Agency (EA) and Natural Resources Wales (NRW) increase levels of monitoring and testing – of both point source and diffuse pollution – to reduce reliance on modelling and help make evidence-based decisions, particularly where the impacts on rural businesses could be significant. This could include programmes encouraging citizen science, led by farmers.

6. FLOOD RESILIENCE

6.1 The case for action

In contrast with the increasing chance of drought and dry weather in summer, winters are projected to be warmer and wetter with a greatly increasing risk of flooding, storm surges, coastal erosion and heavy rainfall.

The Met Office estimates that climate change has increased the risk of floods in England and Wales by at least 20% and up to 90%¹⁴.

While there is little that can be done to prevent rainfall, when it comes to reducing flooding, it is all about the “three Rs”: response, recovery and resilience.

Both tidal and fluvial flooding can severely damage agricultural land. During the series of heavy rainfall and flood events in the winter of 2018-2019, farmers in Lincolnshire and the Midlands spent up to three months underwater, with the waterlogged soils resulting in poor crop yields, erosion and runoff, feed spoilage, water contamination, and impacts on animal health. An ADAS study following the 2013-2014 flooding in Somerset estimated that the total cost of that flood event to agricultural land was around £18.9 million¹⁵.

“The Met Office estimates that climate change has increased the risk of floods in England and Wales by at least 20% and up to 90%.”



FLOOD EVENTS 2007 - 2021

2007	Summer floods across the UK
2013	Coastal surge East Anglia
2013 - 2014	Flooding in the Somerset Levels
2015 - 2016	Winter flooding in the North
2018	Coastal erosion in Hemsby
2019	Flooding in Wainfleet, the Yorkshire Dales, Lincolnshire and the Midlands
2019 - 2020	Extensive flooding from storms Ciara and Dennis
2020	Wettest February since records began in 1862
2021	Extensive flooding from storms Bella and Christoph

6.1.1 Flood risk can be mitigated through collaboration

The very nature of rivers and water flows means that everyone, upstream and downstream, must play their part to reduce the impact of flooding to those most at risk. This means action must be taken in a collaborative, holistic way with a strong catchment focus.

Responsibility for flooding is shared between the Environment Agency (EA) in England, Natural Resources Wales (NRW) and Lead Local Flood Authorities (LLFAs) alongside landowners and farmers, many of whom have flood defence infrastructure or assets on their land or manage riparian areas. Internal Drainage Boards (IDBs), where they exist, also play a pivotal role in managing flood risk by maintaining water levels. These organisations must all work together in a collaborative and holistic way to ensure flood risk is mitigated at a catchment level.

14. Met Office, *UK extreme events – heavy rainfall and floods*: <https://www.metoffice.gov.uk/research/climate/understanding-climate/uk-extreme-events-heavy-rainfall-and-floods>

15. ADAS (2014), *Impact of 2014 Winter Floods on Agriculture in England*: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/401235/RF17086_Flood_Impacts_Report__2_.pdf

The EA has published a *National Flood and Coastal Erosion Risk Management Strategy* for England, outlining how we can become “a nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100”.

The EA and NRW have powers to undertake flood risk work on main rivers, and carry out any maintenance, improvement or construction work to mitigate flood risk on those rivers. Funding cuts, understaffing and a lack of resources have resulted in these responsibilities being neglected in recent years, exacerbating flood risk in some rural areas. In 2017, the EA began a process of “de-maining” some main rivers in England, re-designating them as “ordinary watercourses” and allowing for the transfer of responsibility for flood risk mitigation to the relevant local IDBs and LLFAs. The CLA has supported this project as it helps ensure the best resourced body is in place to manage flood risk.

6.1.2 Protecting local communities from flooding is a public good

Landowners and land managers are playing an increasingly important role in mitigating flood risk for towns, villages and communities downstream. Taking a catchment-based approach and using Natural Flood Risk Management (NFM) holds great potential as part of local flood mitigation programmes. Well-managed river landscapes with a variety of habitats, water storage options including wetlands, meandering rivers and leaky dams to slow the flow, and healthy soils that retain water, greatly mitigate flood risk. Given these solutions have co-benefits for water quality and carbon storage, funding for NFM is most suited to payment for public goods through the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales.

These types of solutions work well when combined with hard engineering or infrastructure like flood banks or sea walls, reducing the pressure placed on the hard options and making them less likely to fail. For some farmers and landowners, there may be options to build reservoirs that are designed to capture flood water and hold it to be used in times of drought.

Many landowners often have their land deliberately flooded to protect communities downstream from further flooding. This is not usually as part of a NFM project, but instead where, for example, sluice gates are opened or closed to purposefully flood land. This can sometimes occur without landowner consent. This is an important and valued service, saving potentially millions of pounds’ worth of damage to local homes and businesses, but can be hugely damaging to agricultural land. Action must be taken to mitigate this damage where possible or provide compensation for losses, where appropriate.

In some regions, landowners entered into schemes in the 1980s where they took a lump payment by LLFAs to compensate for future damage where their land is used as a “washland” in this way. With the increasing likelihood and severity of flooding, much of this washland is suffering long-lasting damage and is reaching a point where it cannot sustain agricultural production. It is critical that this land is prioritised for pumping after flood events, and landowners adequately compensated.

“Everyone, upstream and downstream, must play their part to reduce the impact of flooding to those most at risk.”



6.1.3 Maintenance of flood defence assets and rivers should be a priority

Flooding can be devastating to agricultural land, in some cases taking years for land managers to get back to business-as-usual. For that reason, it is critical that flood risk management is well-funded and resourced and that all those involved play their part. In the 2020 Budget announcement, £5.2 billion was announced for flood risk reduction, earmarked specifically for new infrastructure. In many rural areas the key issue is not a need for new infrastructure, but a lack of maintenance of existing infrastructure and on main rivers.

“Well-managed river landscapes with a variety of habitats greatly mitigate flood risk.”

Riparian landowners are keen to support flood defence work and ensure rivers are well-maintained, but lack of clarity around responsibilities and bureaucratic delays in approval of work results in slow and costly repairs. Landowners who manage land on main rivers must apply for an environmental permit to undertake any work on those rivers. Those on smaller rivers are often not clear where and how they are able to undertake flood risk mitigation work. While there is guidance available, the different circumstances and geography of local watercourses often mean it is difficult to ascertain what their options are or who is responsible for work. In some circumstances, this has inadvertently led to prosecutions or penalties.

For areas along main rivers where the EA or NRW do not have adequate resourcing – or are failing to carry out their responsibilities – solutions to reduce flood risk can be found by working with local landowners.

This might include:

- special “catchment permits” to allow for ongoing, low-risk maintenance work;
- fast tracking flood risk activity permits for areas at imminent risk of flood;
- looking into options for private sector collaboration; and
- assessing the potential of NFM schemes.

The EA has options to take a partnership approach to flood risk work with other public sector stakeholders, through Public Sector Cooperation Agreements (PSCA) and this approach should extend to include local landowners in the decision-making process.

The establishment of independent partnership groups to manage local flood risk, like the Somerset Rivers Authority (SRA), has proven in many areas to be more efficient and cost-effective than the EA or NRW. The SRA was created in 2015 in response to the extensive flooding in 2012 and 2013/14 and has since seen great success in managing flood risk on the Somerset Levels. Where the creation of these groups has strong local support, they must be encouraged to form and take over flood risk responsibilities from the EA or NRW. The total Government spend on flood risk mitigation must remain high, but it could be better spent providing funding for these groups, rather than the relevant government agencies.

Landowners can be further empowered to support flood risk mitigation where there is accurate risk mapping, modelling and assessment. This also can help farmers and landowners make decisions on land use, insurance and investment options. The current National Flood Risk Assessment tool is underpinned by technology from the early 2000s but a new tool is under development and will be available in 2024. Alongside this, the EA is improving the National Coastal Erosion Maps. It is critical these are as accurate as possible and easily available to farmers and landowners.

Land drainage and Internal Drainage Boards

Land drainage and water levels are closely linked with flood risk management, with climate change, rising sea levels and ageing flood defence infrastructure greatly increasing the need for coordinated action on surface water management.

Land drainage impacts the ability of CLA members to use their land for its intended purpose and influences agricultural production directly. Poor drainage makes it impossible to carry out certain activities and can reduce the viability and potential of land for its use, for instance by reducing the growth or quality of crops.

Internal Drainage Boards (IDBs) are local public authorities that work across specific Internal Drainage Districts in England and Wales. There are 120 IDBs in England and three in Wales (two cross the border), covering 1.2 million hectares of land in England and 28,500 hectares in Wales. Farmers and landowners contribute to the funding of IDBs through drainage rates and special levies. The primary work undertaken by IDBs is the maintenance and improvement of watercourses and related infrastructure such as pumping stations, weirs, sluices, culverts and embankments.

6.1.4 Coastal erosion and storm surges are becoming increasingly likely

The UK is one of the most vulnerable European countries to sea level rise, and with this comes an increasing risk of coastal flooding and storm surges. There are specific issues related to coastal flooding, with salt water causing lasting damage to crops, grass and soils. In most areas the coastline is defended through tidal barriers, sea walls and natural flood defences like saltmarshes. As the risk of coastal inundation increases, further options must be investigated, for example, partnerships between landowners and both the EA and NRW to ensure landowners are able to undertake timely and efficient repairs themselves. Alongside these types of arrangements, ring-fenced funding and regular maintenance of barriers is critical and will help prevent any communities being forced into a position of “managed retreat”.



6.2 Solutions that work

Natural Flood Risk Management

There is increasing evidence that Natural Flood Risk Management (NFM), at a catchment level, can be extremely successful in mitigating flood risk, while promoting other benefits like biodiversity, water quality improvements and carbon storage¹⁶.

NFM is a nature-based solution used to reduce flooding downstream, by harnessing natural processes to slow the flow and make more space for flood water. It might include things like restoring the bends in rivers, improving soil health to allow more water absorption, creating wetlands and salt marshes to create a buffer between the land and rivers or the sea, or planting trees and shrubs to slow runoff and stabilise river banks.

Often it is combined with harder flood defence infrastructure downstream or on the coast. This might involve using NFM upstream to reduce pressure on walls or weirs found downstream.

One of the simplest options for nature-based solutions to flood risk is in improving soil health on farms. Well-structured and functioning soils are able to absorb and hold on to more water, both reducing flood risk and improving resilience to drought. Extremely compacted soil inhibits water flow, so efforts can be made on farms to ensure good drainage, low levels of erosion, use of cover crops and minimal passes from farm machinery.

Case study: Mill Brook, Tattenhall, Cheshire

After extensive flooding in the early 2000s, it was clear the community of Tattenhall in Cheshire would be subject to increasing flood risk in the coming decades. In an effort to reduce potential damage as far as possible, the team at Bolesworth Estate, along with tenant farmers, the Environment Agency (EA) and the local Wildlife Trust looked into how changes to the landscape could potentially help.



The Mill Brook was previously straightened hundreds of years ago for a village mill and to increase the amount of agricultural land available, ultimately putting the local community at greater flood risk and increasing the amount of diffuse pollution in the water course.

To “slow the flow” two large flood storage areas were created, a wider riparian zone with a wildlife corridor and two large woody dams. This created 1.5 hectares of priority reedbed and wet grassland, making more space for flood water whilst enhancing habitats and improving biodiversity. These NFM projects have helped to mitigate flood risk to 2,000 people living downstream.

16. Environment Agency, (2021), *Working with natural processes to reduce flood risk*. <https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/working-with-natural-processes-to-reduce-flood-risk>

6.3 CLA recommendations

Flood risk can be mitigated for all those upstream and downstream if flood defences are well-maintained, options are explored for Natural Flood Risk Management (NFM) and there is collaboration across catchments. Landowners and farmers are willing to use their land to prevent flood risk to communities downstream and to undertake flood risk management work where appropriate, but this should be recognised as a public good.

The CLA recommends action is taken in the following areas.

6.3.1 Landowner responsibilities

The CLA calls on the Government to:

- a) require the Environment Agency (EA) and Natural Resources Wales (NRW) to clarify the responsibilities for flood defence work, and develop a flexible approach to agree solutions that would allow land managers to undertake certain low-risk work; and
- b) ensure that where landowners have their land used to store flood water, there is full consent and landowners are compensated by the Government in a way that is commensurate to the loss of agricultural production and recognises the costs saved for properties and businesses downstream.

6.3.2 Flood defence assets

The CLA calls on the Government to:

- a) supplement the £5.2 billion funding for new flood defence infrastructure with additional funding for maintenance of existing flood defence assets and main rivers and to ensure that funding goes to the regional body best-placed to manage local flood risk;
- b) ring-fence part of the flood defence funding for coastal erosion and sea level rise in both England and Wales to protect agricultural land or areas of environmental value at risk of coastal inundation;
- c) ensure the Environment Agency (EA) continues to assess the flood risk of different catchments with a view to transferring flood risk mitigation responsibilities for more main rivers to local Internal Drainage Boards (IDBs) or Lead Local Flood Authorities (LLFAs), a process known as “de-maining”, where appropriate; and
- d) confirm that the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales will fund Natural Flood Risk Management (NFM) projects particularly those with co-benefits for carbon storage, biodiversity and water quality.

6.3.3 Catchment-focused flood risk work

The CLA calls on the Government to:

- a) introduce a catchment-focused approach to flood risk management to ensure the right bodies are in place to deal with flood risk. A flexible, regionally-specific approach will be important;
- b) require Lead Local Flood Authorities (LLFAs) to engage with all landowners impacted by a flood management scheme;
- c) oblige Lead Local Flood Authorities (LLFAs) to ensure flood and coastal erosion risk mapping is as accurate as possible and is actively communicated to land managers and rural communities; and
- d) facilitate further research and development into the benefits of catchment-scale Natural Flood Risk Management (NFM) projects and ensure landowners and other stakeholders are fully engaged in the process.

7. SUMMARY OF RECOMMENDATIONS

The CLA's vision is that by 2030 rural land-based businesses have reliable access to water supplies for their current and future needs, are resilient to the risk of flood and drought, and are recognised for their stewardship of water quality and resources.

This vision is critical to the foundation of the long-term security of farming and the environment. The CLA recommends action is taken in the following areas.

Chapter 4. Drought and water availability

Land managers and rural businesses need to build resilience to the changing climate by planning ahead and looking to secure their current and future water needs in innovative ways. Government funding, advice and guidance – alongside cross-sector collaboration – will become increasingly important to support those actions that happen on the farm.

4.3.1 Abstraction and drought

The CLA calls on the Government to:

- a) require Defra, the Environment Agency (EA) and Natural Resources Wales (NRW) to include water for crops and livestock as an essential use of water in the National Drought Plan and in the abstraction plan, given that holistic, catchment-focused water management is a necessity;
- b) work with water resources groups to find better ways of engaging all landowners in the collaborative process to agree sustainable, flexible abstraction plans;
- c) provide information and guidance on water projections at a farm level to help with water management planning;
- d) match-fund grants through the Farming Investment Fund in England and the Farm Business Grant in Wales to promote water saving and technology for efficient irrigation systems; and
- e) pay compensation when permanent abstraction licences are revoked or changed.

4.3.2 Private water supplies

The CLA calls on the Government to:

- a) ensure that local authorities charge administrative costs that are proportionate for small private water supply owners;
- b) provide support for private water supply owners to manage demand and improve water quality, for example, through Government grant schemes for water meters or new piping; and
- c) assist with funding to support private water supply resilience, through grants for hydrological surveys, water reservoirs, deeper wells or to look at the feasibility of connecting to mains.

4.3.3 Water storage

The CLA calls on the Government to:

- a) ensure Government productivity grant schemes in England and Wales include continued grant funding over the next three years to cover at least 40% of the cost of on-farm reservoirs and associated infrastructure;

- b) require planning authorities to provide certainty to landowners and ensure a streamlined planning process for on-farm water infrastructure with Permission in Principle (PiP) to avoid unnecessary costs;
- c) introduce grant funding through agricultural productivity schemes for smaller-scale projects to increase water use efficiency such as rainwater harvesting; and
- d) maintain the definition of a “large raised reservoir” in England at 25,000 cubic metres under the Reservoirs Act 1975 as it is appropriate for the risk posed.

4.3.4 National infrastructure

The CLA calls on the Government to:

- a) implement a national infrastructure programme for water storage and water transfer to ensure that there are sufficient supplies for all water users.

Chapter 5. A thriving water environment

Farmers and land managers must take responsibility for their impact on water quality but need support from the Government and the private sector. This could be through a combination of clear, well-communicated regulation, worthwhile incentives and options for innovation. The Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales provide an opportunity to help solve these water quality issues in a way that enhances natural capital.

5.3.1 Regulation, advice and guidance

The CLA calls on the Government to:

- a) offer continued training, advice and grant support through the Catchment Sensitive Farming programme in England, and expand the Farming Connect initiative in Wales;
- b) review and simplify the Farming Rules for Water in England and Welsh guidance on NVZs, and better communicate them to farmers through improved engagement from the Environment Agency (EA) and Natural Resources Wales (NRW); and
- c) where costs are disproportionate, support through grant funding and advice from local authorities the upgrading of private water supplies or connection to mains supply.

5.3.2 Actions for farming

The CLA calls on the Government to:

- a) provide long-term, Government-matched grant funding for on-farm infrastructure and technology to reduce fertiliser, pesticide and slurry runoff, including slurry stores, precision agriculture and integrated pest management equipment;
- b) ensure the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales fund land management practices and nature-based solutions that support water quality improvements, particularly those with co-benefits for climate change mitigation and adaptation and biodiversity, such as riparian planting and soil management; and
- c) make sure future Government funding schemes aiming to improve water quality are designed to work in conjunction with potential private sector funding streams, for example, payments for ecosystem services or environmental markets, or water company initiatives.

5.3.3 Monitoring and targets

The CLA calls on the Government to:

- a) work with the industry to agree targets through the Environment Bill (due to become law in 2021) or any other regulation. These targets must be evidence-based and take into account different farm systems and regional, hydrological and geographic conditions to ensure they are achievable. The Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales should be the delivery mechanism; and
- b) ensure that the Environment Agency (EA) and Natural Resources Wales (NRW) increase levels of monitoring and testing – of both point source and diffuse pollution – to reduce reliance on modelling and help make evidence-based decisions, particularly where the impacts on rural businesses could be significant. This could include programmes encouraging citizen science, led by farmers.

Chapter 6. Flood resilience

Flood risk can be mitigated for all those upstream and downstream if flood defences are well-maintained, options are explored for Natural Flood Risk Management (NFM) and there is collaboration across catchments. Landowners and farmers are willing to use their land to prevent flood risk to communities downstream and to undertake flood risk management work where appropriate, but this should be recognised as a public good.

6.3.1 Landowner responsibilities

The CLA calls on the Government to:

- a) require the Environment Agency (EA) and Natural Resources Wales (NRW) to clarify the responsibilities for flood defence work, and develop a flexible approach to agree solutions that would allow land managers to undertake certain low-risk work; and
- b) ensure that where landowners have their land used to store flood water, there is full consent and landowners are compensated by the Government in a way that is commensurate to the loss of agricultural production and recognises the costs saved for properties and businesses downstream.

6.3.2 Flood defence assets

The CLA calls on the Government to:

- a) supplement the £5.2 billion funding for new flood defence infrastructure with additional funding for maintenance of existing flood defence assets and main rivers and to ensure that funding goes to the regional body best-placed to manage local flood risk;
- b) ring-fence part of the flood defence funding for coastal erosion and sea level rise in both England and Wales to protect agricultural land or areas of environmental value at risk of coastal inundation;
- c) ensure the Environment Agency (EA) continues to assess the flood risk of different catchments with a view to transferring flood risk mitigation responsibilities for more main rivers to local Internal Drainage Boards (IDBs) or Lead Local Flood Authorities (LLFAs) – a process known as “de-maining”, where appropriate; and
- d) confirm that the Environmental Land Management (ELM) scheme in England and the Sustainable Farming Scheme (SFS) in Wales will fund Natural Flood Risk Management (NFM) projects particularly those with co-benefits for carbon storage, biodiversity and water quality.

6.3.3 Catchment-focused flood risk work

The CLA calls on the Government to:

- a) introduce a catchment-focused approach to flood risk management to ensure the right bodies are in place to deal with flood risk. A flexible, regionally-specific approach will be important;
- b) require Lead Local Flood Authorities (LLFAs) to engage with all landowners impacted by a flood management scheme;
- c) oblige Lead Local Flood Authorities (LLFAs) to ensure flood and coastal erosion risk mapping is as accurate as possible and is actively communicated to land managers and rural communities; and
- d) facilitate further research and development into the benefits of catchment-scale Natural Flood Risk Management (NFM) projects and ensure landowners and other stakeholders are fully engaged in the process.

8. APPENDIX 1: REGULATORY FRAMEWORK FOR WATER MANAGEMENT IN ENGLAND AND WALES

8.1 Legislation and policy

Agriculture Act 2020: establishes a new agricultural payment system to replace the Basic Payment System (BPS) based on “public money for public goods”. The “public goods” listed include managing land or water in a way that:

- protects or improves the environment;
- mitigates or adapts to climate change; and
- prevents, reduces or protects from environmental hazards.

Environment (Wales) Act 2016: aims to protect Wales’ natural resources – nature, land, water and air.

Flood and Water Management Act 2010: aims to provide better, more sustainable management of flood risk for people, homes and businesses, help safeguard community groups and identify Risk Management Authorities.

Land Drainage Act 1991: requires that a watercourse be maintained by its owner in such a condition that the free flow of water is not impeded and establishes the role of Internal Drainage Boards (IDBs).

The Environment Bill 2020: introduced to parliament on 15 October 2019, reintroduced on 30 January 2020, currently delayed until mid-2021. If passed as proposed, it will:

- dictate collaboration between water companies and other sectors to achieve clean and plentiful water;
- change the circumstances in which an abstractor can receive compensation where their licence is amended or revoked;
- allow for greater monitoring of water pollutants; and
- allow for the creation or expansion of IDBs.

The Nitrate Pollution Prevention Regulations 2015: provide for the designation of Nitrate Vulnerable Zones (NVZs) and impose rules and requirements on agricultural practices to protect waters against nitrate pollution.

The Private Water Supplies Regulations 2016 and Private Water Supplies (Wales) (Amendment) Regulations 2010 and 2017: outline the standards and requirements for drinking water.

The Reservoirs Act 1975: regulates and defines “large raised reservoirs” in England and Wales.

The Water Act 2003: modernises the regulatory framework for water management in England and Wales, amending the framework for abstraction licencing.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017: establish a framework for water management: identifying river basin districts, mandating the creation of river basin management plans and directing the Environment Agency (EA) and Natural Resources Wales (NRW) to classify the status of water bodies.

The Water Industry Act 1991: defines the relevant powers and responsibilities of local authorities and landowners in relation to private water supplies.

The Water Resources Act 1991: regulates water resources, water quality and pollution (including silage, slurry and agricultural fuel regulations), and flood defence work, and sets out the functions of the Environment Agency (EA).

The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021: set rules for certain farming practices, aiming to reduce losses of pollutants from agriculture to the environment. The regulations set standards for silage making and storage of effluent and slurry, and establish good practice for nutrient management.

8.2 European Commission Directives transposed into the legislation of England and Wales

The Drinking Water Directive 1998 (EU legislation): sets quality standards for drinking water and requires drinking water quality to be monitored and reported. The local authority is responsible for regulating private water supplies, including to undertake a risk assessment of all private water supplies, except those serving only a single, owner-occupied, domestic dwelling. For private water supplies, specifically, it is transposed into England and Wales through the Private Water Supplies Regulations 2016 and Private Water Supplies (Wales) (Amendment) Regulations 2010 and 2017.

The Floods Directive 2007 (EU legislation): requires member states to carry out flood risk assessments, create maps of flood risk and develop flood risk management plans. It is transposed into England and Wales through the Flood and Water Management Act 2010.

The Nitrates Directive 1991 (EU legislation): aims to protect water quality by preventing nitrates from agricultural sources polluting water sources. It is transposed into England and Wales through the Nitrate Pollution Prevention Regulations 2015.

The Water Framework Directive 2000 (EU legislation): creates a single system of water management for the European Union, based around a natural river basin; sets objectives and deadlines for improving water quality; and looks at both ecology of water and chemical characteristics. It is transposed into England and Wales through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

8.3 Regulatory bodies

Department for Environment, Food and Rural Affairs (Defra): sets the overall water policy framework in England, including standard setting, drafting legislation and some special permits.

Drinking Water Inspectorate (DWI): regulates drinking water quality in England and Wales to ensure it is safe to drink.

Environment Agency (EA): the environmental regulator of the water sector in England. It has the power and responsibility to manage flood risk from main rivers and the sea, and improve the water environment in England. It has permissive powers to manage flood risk on some smaller rivers.

European Union (EU): sets European water, wastewater and environmental standards that are now adopted into UK legislation.

Natural England (NE): the Government's advisory body on the natural environment in England.

Natural Resources Wales (NRW): the environmental regulator of the water sector in Wales. It has the power and responsibility to manage flood risk from main rivers and the sea, and improve the water environment in Wales. It has permissive powers to manage flood risk on some smaller rivers.

Ofwat: the economic regulator of the water and sewerage sectors, focusing on water companies.

Welsh Government (WG): sets the overall water policy framework in Wales including standard setting and drafting of legislation. The Welsh Government and Defra work closely on water issues.

9. APPENDIX 2: FURTHER INFORMATION

Chapter 4. Drought and water availability

Water availability

- The Environment Agency report *Meeting our future water needs: a national framework for water resources* explores England's long-term water needs for all sectors: <https://www.gov.uk/government/publications/meeting-our-future-water-needs-a-national-framework-for-water-resources>

Abstraction

- The Environment Agency's *Water Abstraction Plan* can be found here: <https://www.gov.uk/government/publications/water-abstraction-plan-2017/water-abstraction-plan>
- A guide to getting an abstraction licence can be found here:
 - ♦ **England:** https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716363/abstracting-water-guide-to-getting-licence.pdf
 - ♦ **Wales:** <https://naturalresources.wales/permits-and-permissions/water-abstraction-and-impoundment/apply-for-a-water-abstraction-or-impoundment-licence/?lang=en>

On-farm reservoirs

- The CLA has produced a handbook on planning and building water reservoirs, from start to finish, CLA89: *A Guide to On-farm Reservoirs*, available to purchase here: <https://portal.clahosting.org.uk/MY-CLA/Shop#!prod/41618bd4-78e8-ea11-810b-005056b16576/curr/GBP>

Private Water Supplies

- The CLA has produced a handbook on the rights and responsibilities of private water supplies for both England and Wales, CLA Handbook CLA88 – *A Guide to Private Water Supplies*, available to purchase here: <https://portal.clahosting.org.uk/MY-CLA/Shop#!prod/883effbb-301b-ea11-8100-005056b16576/curr/GBP>
- Further information from the Drinking Water Inspectorate can be found here for both England and Wales: <https://www.dwi.gov.uk/private-water-supplies/>

Chapter 5. A thriving water environment

Water quality

- The Farming Rules for Water for England can be found here: <https://www.gov.uk/government/publications/farming-rules-for-water-in-england>
- Information about Nitrate Vulnerable Zones (NVZs) can be found here: <https://www.gov.uk/government/collections/nitrate-vulnerable-zones>
- Regulations on storing silage, slurry and agricultural fuel oil for England can be found here: <https://www.gov.uk/guidance/storing-silage-slurry-and-agricultural-fuel-oil> and for Wales: <https://gov.wales/storing-silage-and-slurry>
- The Voluntary Initiative website contains a wealth of resources on responsible pesticide use: <https://voluntaryinitiative.org.uk/>

- Training, advice and grant support is available for farmers through Catchment Sensitive Farming in England: <https://www.gov.uk/guidance/catchment-sensitive-farming-reduce-agricultural-water-pollution> and through Farming Connect in Wales: <https://business.wales.gov.wales/farmingconnect/land/water>
- The Agriculture and Horticulture Development Board (AHDB) has produced a Nutrient Management Guide, available here: <https://ahdb.org.uk/nutrient-management-guide-rb209>
- The Rivers Trust provides further information on water quality and local projects: <https://www.riverstrust.org/2019/01/23/how-healthy-are-our-rivers/>
- The Catchment Based Approach (CaBA) contains a wealth of resources on how catchment management contributes to a healthy water environment: <https://catchmentbasedapproach.org/>

Off-mains drainage

- From the CLA website, CLA members can access CLA Guidance Note GN33-19 which provides information on the rules introduced on 1 January 2020 for septic tanks that discharge directly into watercourses.

Chapter 6. Flood resilience

- The Environment Agency has published a *National Flood and Coastal Erosion Risk Management Strategy for England*, outlining how we can become a “nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100.” It is available here: <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>
- Natural Resources Wales has published a *National Flood and Coastal Erosion Risk Management in Wales*, available here: <https://gov.wales/national-strategy-flood-and-coastal-erosion-risk-management-wales>
- More information on Natural Flood Risk Management is available here: <https://catchmentbasedapproach.org/learn/what-is-natural-flood-management/#:~:text=Natural%20Flood%20Risk%20Management%20is,get%20the%20'design'%20right.>
- Information about the rights and responsibilities of landowners who own a watercourse is available here for England: <https://www.gov.uk/guidance/owning-a-watercourse> and here for Wales: <https://naturalresources.wales/flooding/managing-flood-risk/riverside-property-owners-know-your-rights-and-responsibilities/?lang=en>
- The Association of Drainage Authorities has detailed information on the roles and responsibilities of Internal Drainage Boards: <https://www.ada.org.uk/>
- The current long-term flood risk for areas in England is found here: <https://flood-warning-information.service.gov.uk/long-term-flood-risk> and for Wales: <https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en>

CONTACTS

For more information on *A CLA Water Strategy: a vision for the water environment to 2030*, published in May 2021, contact:

Alice Ritchie
Policy Adviser on Climate Change and Water
Tel: 020 7460 7941
Email: alice.ritchie@cla.org.uk

CLA
16 Belgrave Square
London SW1X 8PQ

Tel: 020 7235 0511
Fax: 020 7235 4696
Email: mail@cla.org.uk
www.cla.org.uk

© Country Land and Business Association Limited 2021
Registered in England and Wales No: 6131587 at the above address

All rights reserved. No part of this publication may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature without prior written permission of the copyright holder except as expressly permitted by law.



A CLA WATER STRATEGY:
A VISION FOR THE WATER
ENVIRONMENT TO 2030

