



Defra

# Evaluation of the catchment-based approach – pilot stage

Baseline characterisation of the pilot catchments

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In Association with



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## **CONTENTS**

<b>1</b>	<b>Introduction.....</b>	<b>4</b>
<b>2</b>	<b>Information Sources .....</b>	<b>6</b>
<b>3</b>	<b>Results .....</b>	<b>7</b>
3.1	Pilot Context .....	7
3.2	Pilot Purpose .....	12
3.3	Pilot Process .....	15

## **1 INTRODUCTION**

The catchments taking part in the pilot phase of the catchment-based approach have been chosen to represent the range of circumstances likely to be encountered in taking forward this approach nationwide. The catchments and the approaches being adopted are very different. Whilst it is impossible to say one approach would be ideal across all catchments, understanding the specific situations of the pilots and the differences between them will help us understand why something works in one catchment but might not work in another. This report captures some key characteristics of the catchments to aid that understanding. The report may also be of interest to the pilot hosts, and those participating in the pilots, to understand how their pilot sits within the overall pilot programme.

The Environment Agency (EA) document “Integrating evaluation into the Working with Others”<sup>1</sup> shows how baseline characteristics should inform evaluations into ways of working, as follows:

Context	+	Purpose	+	Process	=	RESULTS
(when + what else)		(why)		(how + who)		(products + impacts)

We have used these broad categories to collect baseline information on:

- Pilot Context: geographical location, catchment size and type, water body types, and the history of engagement and partnership.
- Pilot Purpose/Focus: key pressures the pilot will address, and primary drivers for the pilot.
- Pilot Process/Design: Leadership, start time, decisions on design approaches, early thoughts on stakeholders, challenges and tasks.

This report is based on material from: initial Expressions of Interest (EOI’s) submitted to Defra; the EA pilot details presented in the pilot template and material presented at the first launch event in the form of posters in February. This initial information was sent to pilot hosts in March with a request to ‘check details given’ and complete information gaps. Information was received from all the pilots so that very few gaps remain.

This report constitutes ‘Task 2.1 Develop Baseline Conditions within Pilots’ of the Catchment Pilots Evaluation work. It is a live document which will evolve as the pilots develop their approaches, and further contextual differences emerge, up to the

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<sup>1</sup> Warburton D. (2009) Integrating evaluation into the Working with Others. Environment Agency.



end of 2012. The following sections summarise the position in terms of context, purpose and process.

## **2 INFORMATION SOURCES**

Most of the information on the **context** of the pilots (geographical and historical) was taken from the summary table of EA pilot catchments and the EOIs for the 15 stakeholder led pilot catchments.

Information relating to the **purpose** of the pilots (key issues and drivers) was taken from the first River Basin Management Plans (RBMP's) published by the EA in 2009 as well as the summary table of EA pilot catchments and the EOIs for the 15 third-party pilot catchments. As the main objective of the evaluation work revolves around delivery of Water Framework Directive (WFD) objectives, identifying the current conditions of these catchments with respect to these objectives is a key first step. Ecological status data from the RBMPs were difficult to retrieve for some pilot catchments as their geographical extent is not yet clearly defined (as discussed above).

As the information was not provided specifically a comparison in mind, it should be noted that in many cases the figures provided, for example, the geographical extent of the pilot schemes, are estimates as the pilots do not always cover the entire catchment. Information was also presented inconsistently, for example the history of engagement in the catchment has been presented in several ways, as was information on the main issues, drivers and priorities for action (which in some cases were still under consideration). To overcome some of these consistency issues, existing information was collated into spreadsheets and pilot hosts were asked to:

- Check the information for errors.
- Categorise their pilots in terms of size, history of engagement, design type, etc

Further clarification is expected to emerge through the quarterly review process which will be used to update this initial characterisation.

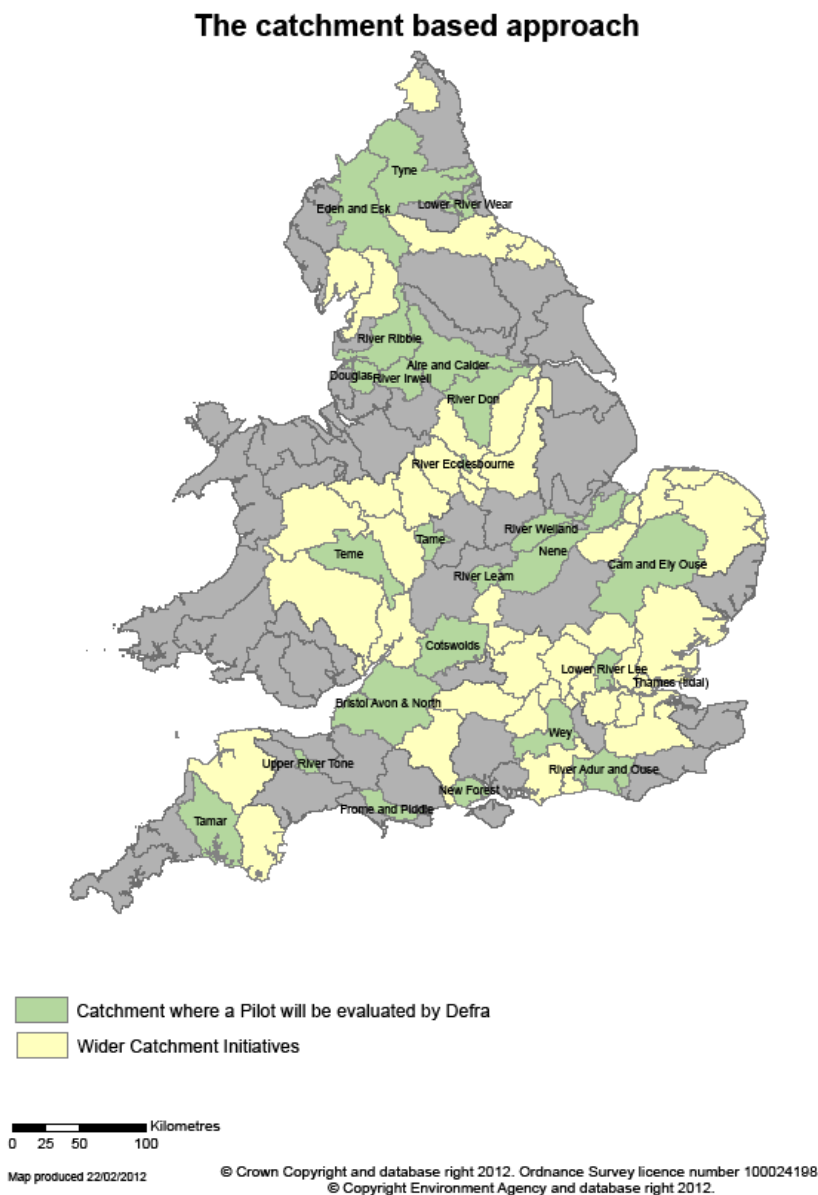
### 3 RESULTS

#### 3.1 PILOT CONTEXT

##### 3.1.1 Size, Location and Land-use

The pilot catchments were selected to cover a range of catchment sizes, location and land use and are distributed across England, from the Tamar pilot in the southwest to the Tyne pilot in the northeast (see Figure 3.1 and Table A.1 in Appendix A).

Figure 3.1 Map of the pilot catchments



The pilots demonstrate a good balance of catchment size, catchment type (urban / rural) and engagement history (see Figure 3.2).

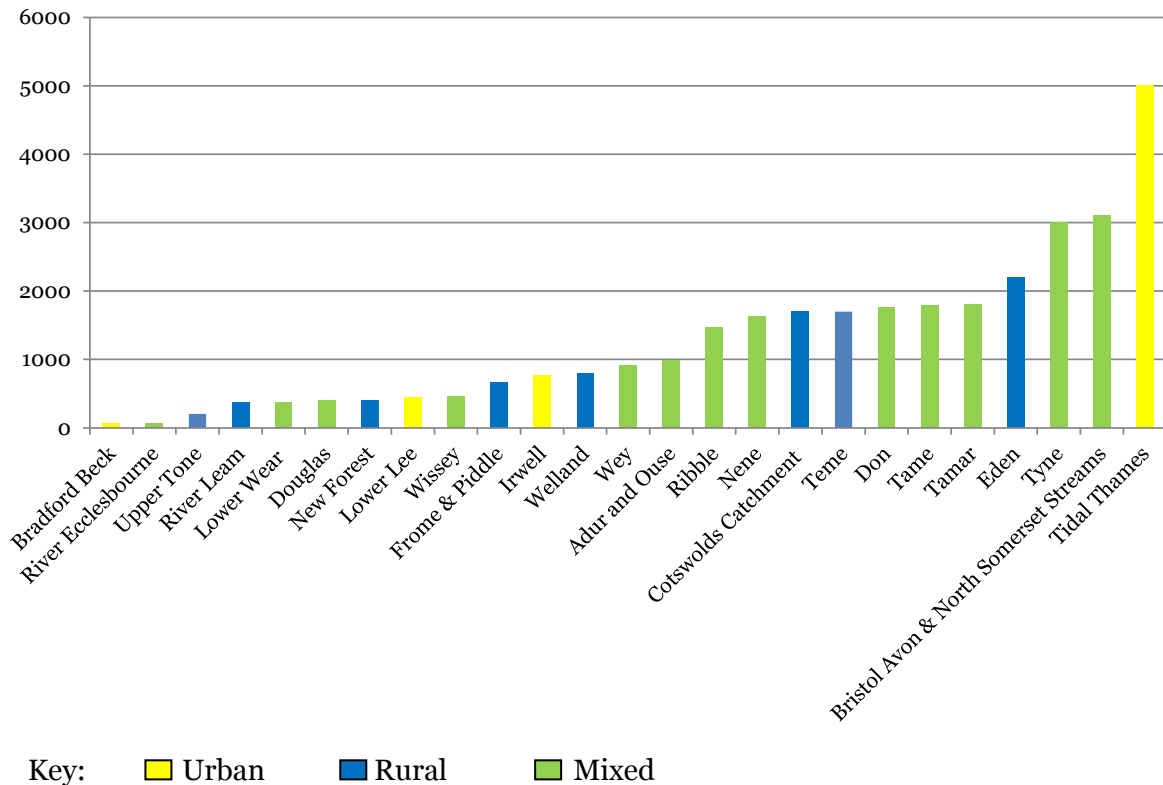
**Figure 3.2 Balance of pilots by catchment size and land-use type**

<b>More urban</b>	Urban 4	Bradford Beck Lower Lee	Irwell	Tidal Thames
	Mixed 13	Douglas Ecclesbourne Lower Wear Wissey	Adur and Ouse Ribble Wey	Bristol Avon Don and Rother Nene Tamar Tame Tyne
	Rural 8	Leam New Forest Upper Tone	Frome and Piddle Welland	Cotswolds Eden Teme
		Small (<500km <sup>2</sup> ) 9	Medium (500 - 1500km <sup>2</sup> ) 6	Large (>1500km <sup>2</sup> ) 10
	<b>Increasing size</b>			

Initial estimates about the geographical area of catchments shows the pilots vary in size from 58km<sup>2</sup> (Bradford Beck) to an estimated 5000km<sup>2</sup> (Tidal Thames) (see Figure 3.3) with more large catchments (>1500km<sup>2</sup>) being covered than medium and small. Larger catchments tend to cover a wider range of land use types and stakeholders, likely adding complexity to the issues these pilots seek to tackle.



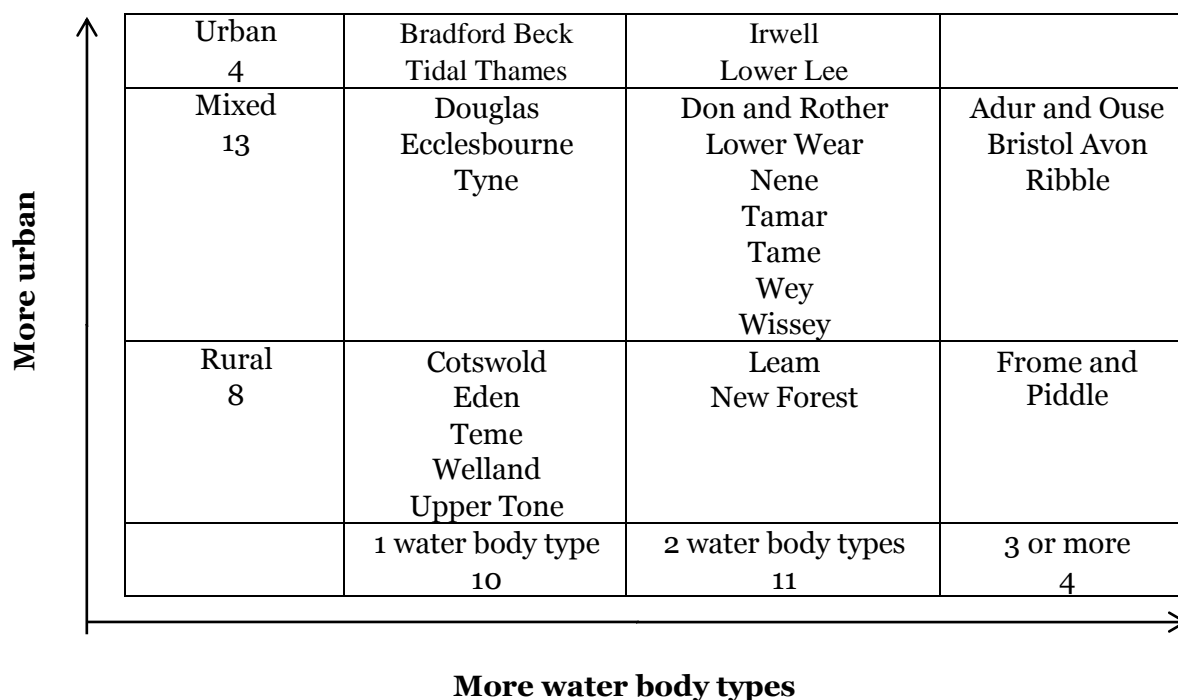
**Figure 3.3 Pilot catchment size (km<sup>2</sup>) and type (urban, rural, mixed)**



**Land-use**

Thirteen of the pilot catchments are described as having mixed land use (Figure 3.4). These are mostly large catchments such as the Tyne and the Ribble which cover both rural and urban areas. Eight of the remaining catchments are predominantly rural such as the Teme in the Midlands and the Eden and Esk catchment in the northwest. The four urban catchments are small to medium in size (apart from the Tidal Thames) and cover predominantly urbanised areas such as the River Irwell in Manchester and the Lower River Lee in London. In urban areas in particular, many river waterbodies have been designated as artificial or heavily modified for purposes such as flood protection, navigation and water supply, this will present different challenges when defining priorities for action compared to those focusing mainly on rural issues.

**Figure 3.4 Spread of catchments by land-use and water body type**



**Water body types**

The pilot catchments cover all water types (Table 3.1) though there are many more pilots addressing inland surface water bodies (rivers, lakes and canals) than those addressing groundwater (12), Transitional and Coastal (TRaC) waters (7) or wetlands (6). Only one pilot catchment (Tidal Thames) comprises entirely TRaC waters but several catchments include estuarine reaches such as the Adur and Ouse pilot on the south coast and the Ribble pilot in the northwest.

**Table 3.1 Water body types covered by the pilot catchments**

Numbers of catchments addressing issues in these water body types						
Rivers	Canals	Lakes	Groundwater	Transitional	Coastal	Wetlands
24	13	16	12	7	7	6

**3.1.2 History and extent of engagement**

The history and extent of engagement varies significantly between pilot catchments (Table 3.2 and Table A.3). Many have carried out some form of engagement with farmers, for example through the Catchment Sensitive Farming delivery initiative. Several pilot catchments are home to long-standing partnerships with different aims which bring together a wide range of stakeholders, including:

**Table 3.2 Balance of pilots by engagement history**

Engagement/ partnership	Low	Medium	High
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<b>history</b>			
<b>Number of pilots</b>	5	11	6

The catchments where pilot hosts categorised their engagement history as high were:

- Cotswold, a rural catchment where the hosts, the Farming and Wildlife Advisor Group (FWAG), have over 40 years’ experience advising farmers and landowners on environmentally sustainable farming and the pilot is underpinned in part by the Cotswold Water Park **WILD** Project (**WFD** with **Integrated Local Delivery**).
- The Eden – where the River Petteril ‘Evidence and Measures Project’ has resulted in an investment to improve Ecological Status in excess of £300,000. The Eden is also a Demonstration Test Catchment, has a River Restoration Strategy, a Fisheries Management Plan, the Eden Invasive Species Group, and an Adaptive Land-use for Flood Alleviation Steering Group – with a twice yearly newsletter / website.
- River Nene Regional Park Partnership (Nene pilot) – where work has already being undertaken as part of the Northampton Central Area Drainage Action Plan which seeks to improve water quality and manage surface water flood risk, supported by EA resources.
- The Tamar – with the long established West Country Rivers Trust who have engaged on water quality issues with public, private and third sectors for many years, though urban engagement has been minimal.
- The Tyne – where the Tyne Rivers Trust, established eight years ago, produced a Strategic Action Plan in 2006 and conducted projects on erosion/siltation, invasive species, fish passage and climate change.
- The Avon Frome Partnership (Bristol Avon and North East Somerset Streams) – where there have been concentrated pockets of engagement linked to local heritage and recreation.

Interestingly some of the catchments originally thought to have a ‘high’ level of engagement, because of know existing groups re-categorised their history as medium in the holistic context of the pilot exercise, notably:

- Parrett Catchment Project (Upper Tone pilot) – flood prevention
- Ribble Catchment Conservation Trust (Ribble pilot) – river restoration
- Thames Estuary Partnership (Tidal Thames pilot) – estuary management

This may reflect changing geographical boundaries to that previously established, or the emergence of a new group of stakeholders.

Stakeholders identified as key, varies between catchments, but the most common stakeholders identified as key at the beginning of the process were the EA, local Rivers Trusts, water companies and local authorities. Other stakeholders include Natural England, local Wildlife Trusts, the National Farmers' Union and Groundwork, while more specialised organisations such as the Royal Society for the Protection of Birds, British Waterways, Pond Conservation and Highways Agency were also involved in some areas.

As partnerships are evolving the types of stakeholders involved is changing as analysed in the first quarterly reports<sup>23</sup>.

### **3.2 PILOT PURPOSE**

In terms of the pressures that the pilot catchments are seeking to address (see Table 3.3 and Table A.2), water quality and biodiversity are a focus, and in almost all cases a major focus, in all catchments. Under the WFD, the aim is for all waterbodies to achieve good status by 2027. An initial review of the WFD data available in the RBMPs<sup>4</sup> shows the variation in the percentage of lake and river waterbodies which met WFD standards for high or good status within the management catchments where the pilots are located (Figure 3.5). Please note that based on current understanding, the Tidal Thames pilot catchment does not contain any freshwater rivers or lakes (although it is influenced by them) and is not included on Figure 3.5 For context, the transitional and coastal waterbodies in the Tidal Thames area all failed to meet good/high WFD standards in the latest RBMP<sup>5</sup>

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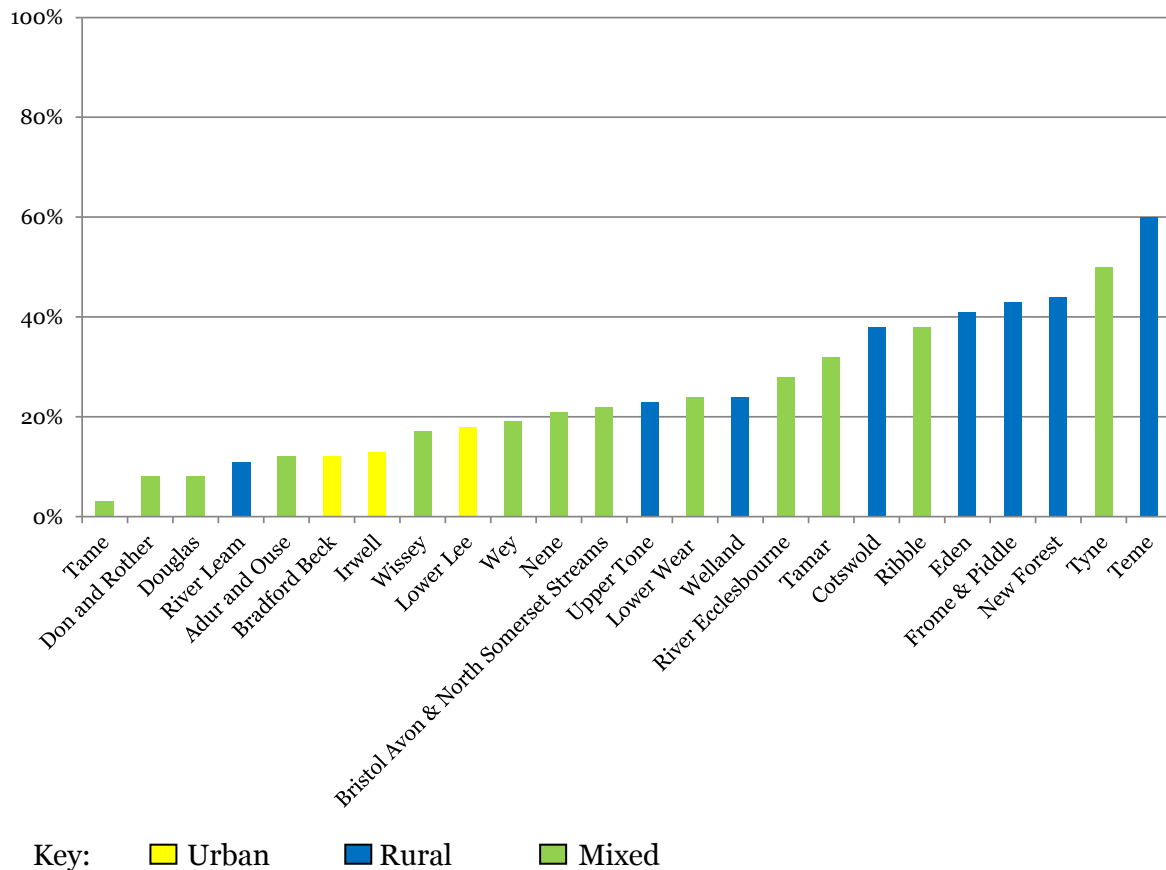
<sup>2</sup> Cascade Consulting (May 2012) Quarterly Review Report

<sup>3</sup> Cascade Consulting (May 2012) First Participant Survey Report

<sup>4</sup> Environment Agency (2009) River Basin Management Plans

<sup>5</sup> Environment Agency (2009) River Basin Management Plans

**Figure 3.5 Percentage of river and lake waterbodies currently at high or good WFD status and type (urban, rural, mixed)<sup>6</sup>**



The percentage of river and lake waterbodies currently at high or good WFD status varied from 3% (Tame pilot) to 60% (Teme pilot) within the management catchments where the pilots are located (compared to an average of 25% across England and Wales). Rural catchments tended to have better levels of compliance with WFD standards than urban catchments; of the two Midlands examples given here, the Tame catchment is heavily urbanised and flows through Birmingham whereas the River Teme is a SSSI which flows through rural parts of Wales and Shropshire. Catchments of mixed land use in the north of England (notably to Tyne and the Ribble) also had a relatively high percentage of waterbodies which met WFD standards. Predominantly urban catchments (Tidal Thames, Bradford Beck, Irwell and Lower Lee) all had below average compliance with WFD standards.

The 25 pilot catchments appear to cover the full spectrum of issues and pressures on the water environment. Most pilot catchments identified a combination of diffuse and point source pollution from urban and rural sources as the main issue. Other problems include over-abstraction, groundwater contamination, legacy issues from

<sup>6</sup> Environment Agency (2009) River Basin Management Plans

mining and industry, poor habitat structure/ diversity, barriers to fish migration, invasive species, reservoir management and sediment accumulation. There is more uncertainty about the extent to which water resources, flood and coastal erosion risk management and climate change adaptation are being addressed. Most catchments think they will cover these areas to some extent, but usually with a minor focus (only 6 or 7 catchments saying these are a major focus).

**Table 3.3 Pressures addressed by the pilot catchments**

<b>Focus</b>	<b>Don't know</b>	<b>No actions</b>	<b>Minor focus</b>	<b>Major focus</b>
Water quality (managing issues such as eutrophication, affected by point/diffuse source pollution pressures)?	0	0	0	25
Biodiversity and fisheries (wildlife and habitat improvement, including biodiversity action plan targets, SSSIs, invasive species reduction and woodland creation)?	0	0	1	24
Flood and coastal erosion risk management (using ecosystems to manage flood risk)?	3	1	13	6 <sup>A</sup>
Water resources (managing water supply and demand in surface waters and groundwater)?	4	3	10	6 <sup>B</sup>
Climate Change Adaptation?	3	4	10	7 <sup>C</sup>
Does Catchment Sensitive Farming have a role to play in supporting improvements in your catchment?	1	5	5	14

Note:

- A Catchments noting a major focus in flood and coastal erosion risk management are: Adur and Ouse, Bristol Avon, Cotswold, Eden, Nene, Tidal Thames.
- B Catchments noting a major focus in water resources are: Adur and Ouse, Bristol Avon, Cotswold, Tamar, Tidal Thames, Wissey.
- C Catchments noting a major focus in climate change adaptation are: Bristol Avon, Cotswold, Nene, Tamar, Tidal Thames, Tyne, Wey.

An initial analysis of pilots covering FRCM issues is provide in Table A.2 (catchment pressure and rivers) provided in Appendix A. Further information of this type will emerge for other areas i.e. climate adaptation as we move forward.

The main objectives for driving change in the pilot catchments vary, but are based around conserving and improving the water environment without impeding the benefits to river users and regional economic development aims. These catchments are subject to varying overarching pressures which may constrain what can be delivered in terms environmental outcomes. Significant urban development is planned for at least ten of the pilot catchments, potentially putting additional pressure on the water environment in the future. Most pilot catchments contain

some Protected Area designated under the WFD with respect to fish, habitats, drinking water, wastewater treatment, nitrate levels or coastal bathing waters. Many pilot catchments also contain conservation areas such as Sites of Special Scientific Interest (SSSI) or Special Areas of Conservation (SAC) with their own objectives for improvement.

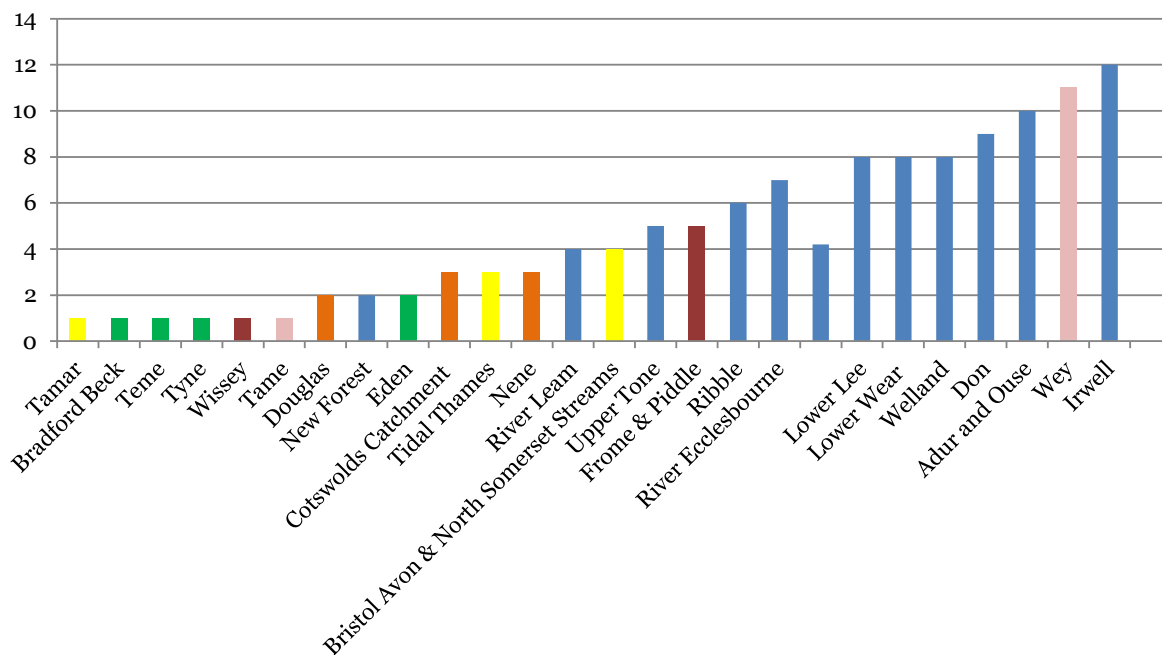
### 3.3 PILOT PROCESS

Information on the **process** of the pilots (specific work being undertaken by each) is more sparse and less certain currently though will become clearer as the pilot process develops.

#### 3.3.1 Run-time (up to end March 2012)

The longest running pilot, the Irwell Pilot, an EA pilot which started in April 2011, is just coming up to 12 months in operation (Figure 3.6 and Table A.4). This is one of only 4 pilots which have been operating for 9 months or more (i.e. began before July 2011). Many pilots have only recently appointed a catchment co-ordinator and are still thinking about organising events for collaborative working. There is a good range of situations in between with the average operation time across all the pilots being around four and a half months.

**Figure 3.6 Run time to March 2012 (months) and host organisation**



Key: EA Rivers Trust Mixed Other Water Company Wildlife Trust  
 Other: Douglas = groundwork, Cotswolds = FWAG, Nene = Park Authority

### **3.3.2 Host organisation**

The most common host is the EA, who are leading ten pilots, followed by Rivers Trusts (five pilots), Groundwork (four pilots), water companies (two pilots) and Wildlife Trusts (two pilots) (see Table 3.4). Other hosts include park authorities, local authorities and various local partnerships. Several pilots are jointly hosted, including partnerships between the EA and local Rivers Trusts, and between community groups within pilot catchments.

**Table 3.4 Catchments by pilot host type**

<b>Organisation type</b>	<b>No of pilots hosted</b>
Environment Agency	10
Rivers Trust	3
Wildlife Trust	2
Park Authority	2
Water Company	2
Groundwork	1
FWAG	1
Mixed	4

### **3.3.3 Other design characteristics**

We asked pilots a number of questions to get a feel for the way they have designed the processes for catchment-based management in their catchment, Table 3.5 summarises the questions and the responses received.



**Table 3.5 Range of Process Designs in the Pilot Catchments**

Questions on design approach	Responses			
How many years do you think that your pilot will run for?	One year 7	2 - 5 years 7	6 - 10 years 4	More than 10 years 7
What approach will you use to develop the catchment plan?	They will emerge as we go 14	Plan approaches thoroughly up front 9	Follow an existing delivery model 2	
What is the key driver?	WFD 15	Merge WFD and something else 2	Something else 8	
Are you starting locally or at the catchment level?	Starting at the catchment level and working down to local level 18		Starting locally and working up 7	

Most pilots (18) are starting at the catchment level and working down to local level, compared to 7 pilots starting locally and working up.

Most pilots (15) quote WFD as their priority focus and a further two focus on combining WFD with other objectives, but in many cases the focus is more on collaborative working and building a multi-sectoral community, making the water body an asset for all, something else, or specific aspects of the water environment that align with the drivers of members of the steering group, for example, improved drinking water quality, recreation and access, improved habitat connectivity, green infrastructure, focussing on delivering multiple benefits, or demonstrating the use of existing delivery models.

Most pilots (14) believe their approaches to collaborative working will emerge as they go, 9 will plan approaches thoroughly up-front and 2 (Cotswold and the Ribble) are following existing delivery models.

Pilots have different expectations of how long the pilot will last, some (7) seeing this as a one year process, but most seeing this as the start of something much longer term, with 7 expecting the initiative to last more than 10 years.

### **3.3.4 Stakeholders**

The initial view of potential partners varied between pilots with some identifying one or two stakeholders in the pilot catchment and others providing lists of over 15 relevant and active partners, reflecting the size, complexity and history of engagement in the different pilot catchments (Table A.5). The stakeholders

identified and involved is likely to develop as part of the pilot engagement process, and initial groups identified reflect those most heavily involved in the past as discussed in the previous section on pilot context.

### **3.3.5 Proposed tasks (only available to date from the 15 stakeholder led EOIs)**

These were fairly general as would be expected at this early stage. While the main focus for pilots is on bringing stakeholders together to improve the water environment, other actions varied between improving the evidence base, reviewing/producing catchment plans and carrying out internal evaluation of the pilot itself to inform future work. There was a noticeable variation between pilots regarding the importance of WFD status as a target, which may impact the effectiveness of the pilot schemes for delivery of WFD objectives and will need to be monitored as part of the evaluation process.

The results are given in full and on a catchment by catchment basis in the Appendices that follow.

The baseline information will be reviewed towards the end of the pilot phase and will be reported in early 2013.