



Improving safety, protecting lives

Biennial report on reservoir safety

1 April 2011 - 31 March 2013

We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

Published by:

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# Foreword

Since the Environment Agency took over the role of Enforcement Authority for the Reservoirs Act, there has been a general trend towards reducing numbers of non-compliant reservoirs. It is notable that it has been unnecessary for us to initiate any prosecutions in the period covered by this report.

We have proactively worked with reservoir undertakers to increase their awareness of their responsibilities under the Reservoir Act 1975 and the positive impacts of face-to-face meetings, and our providing clear advice and guidance is having a positive impact on reservoir safety. We aim to continue this work and drive continuing improvement in the compliance record.

A handwritten signature in black ink, appearing to read 'A. Deakin', with a small asterisk above the final 'n'.

Antony Deakin  
FCRM Manager – Reservoir Safety

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# 1. Our Role

We are the enforcement authority for the Reservoirs Act 1975 and this biennial report looks at the work that we've done since 1 April 2011.

On 1 April 2013 Natural Resources Wales (NRW) became the enforcement authority for reservoirs in Wales. Future reports will be produced by Environment Agency for England and by NRW for Wales.

In Section four we look forward to the work that we will be doing over the next two years.

Under the Reservoirs Act 1975 we:

- maintain a register of all reservoirs under the Reservoirs Act 1975 (the Act);
- encourage undertakers (reservoir owners, operators and users) to comply with the Act by writing to them at regular intervals;
- make sure that undertakers appoint a supervising engineer for their reservoirs;
- make sure that undertakers have their reservoirs inspected by qualified inspecting engineers;
- make sure that undertakers carry out any necessary repairs, improvements or studies ('measures to be taken in the interests of safety' (MIOS)) required by the inspecting engineer;
- make sure that undertakers appoint a construction engineer to design and supervise the construction or alteration of large raised reservoirs;
- appoint engineers and commission engineering work, including any necessary repairs (measures in the interests of safety) when an undertaker does not comply with the Act. We charge undertakers for this work;
- appoint engineers in an emergency, to make sure that essential safety works are completed;
- share lessons learnt from reservoir incidents.

## 2. Background

Although there have been no recent reservoir failures that have resulted in loss of life, it was the death of 21 people after the failure of two dams in 1925 that led to the passing of the Reservoir (Safety Provisions) Act 1930. This Act was updated by the Reservoirs Act 1975.

The Reservoirs Act 1975 introduced:

- the role of the supervising engineer;
- the role of the enforcement authority;
- the register of reservoirs which was to be kept up-to-date.

The Water Act 2003 transferred the responsibility for enforcing the Reservoirs Act 1975, which covers large raised reservoirs in England and Wales, to the Environment Agency.

The National Assembly for Wales agreed the Natural Resources Body for Wales (Functions) Order 2013 on 19 March 2013, which transfers functions from existing bodies to Natural Resources Wales (NRW), including the role of regulatory body for all reservoirs in Wales.

The Flood and Water Management Act 2010 (FWMA) makes further amendments to reservoir safety legislation. Phase one was implemented on the 30 July 2013 in England. Under this Act responsibility for regulation of large raised reservoirs in Wales was transferred to NRW.

## 3. Our achievements

Over the past two years we have:

- seen the number of reservoirs with an inspection due and no inspecting engineer appointed increase from one to fourteen. Many of these increases were due to undertaker's uncertainty of how the FWMA may have changed their need to appoint panel engineers.
- seen the number of reservoirs with safety inspections overdue by more than a year decrease from twelve to one
- appointed supervising and inspecting engineers at four 'orphan' reservoirs. (Orphan reservoirs are those without an undertaker)
- made the 'orphan' reservoir Sunderton Pool safe by carrying out measures in the interests of safety.

**Table 1:** reservoirs non-compliant on 31 March 2011 and 2 April 2013

	Situation on 31 March 2011	Situation on 2 April 2013		
	England & Wales	England & Wales	England only	Wales only
<b>No supervising engineer appointed</b>	6	16	12	4
<b>Inspection due, and no inspecting engineer appointed</b>	1	14	12	2
<b>Section 10 inspection overdue by more than a year, but an inspecting engineer has been appointed</b>	12	1	0	1
<b>Measures in the interests of safety overdue (not completed as soon as practicable) or have exceeded the deadline set by inspecting engineer</b>	49	57	51	6

**Table 2:** Data recorded over the past two years

	England	Wales	Total
<b>Number of newly constructed reservoirs</b>	29	0	29
<b>Number of supervising engineer appointments</b>	669	150	819
<b>Number of inspecting engineer appointments</b>	508	46	554
<b>Number of 10(5) certificates after the satisfactory completion of an inspection under Section 10 of the Act</b>	292	31	323
<b>Number of these 10(5) certificates which contained measures to be taken in the interests of safety</b>	126	9	135
<b>Number of section 10(6) certificates showing that measures to be taken in the interests of safety had been satisfactorily completed</b>	172	14	186

### A risk based approach to enforcement

The main causes of non-compliance are:

- A supervising engineer has not been appointed. Every reservoir must have a supervising engineer appointed at all times unless it is being supervised by a construction engineer
- An inspecting engineer has not been appointed to carry out the Section 10 inspection
- Essential safety measures, called 'measures in the interests of safety', identified by the inspecting engineer have not been completed by the specified date, or 'as soon as practicable'.

We continue to focus on reservoirs that pose the greatest risk to public safety. Our highest priority is to ensure that all reservoirs have a supervising engineer appointed at all times. We then make sure that reservoirs have an inspecting engineer appointed at the appropriate time, that the certificate and report are produced, and that essential safety works are completed.

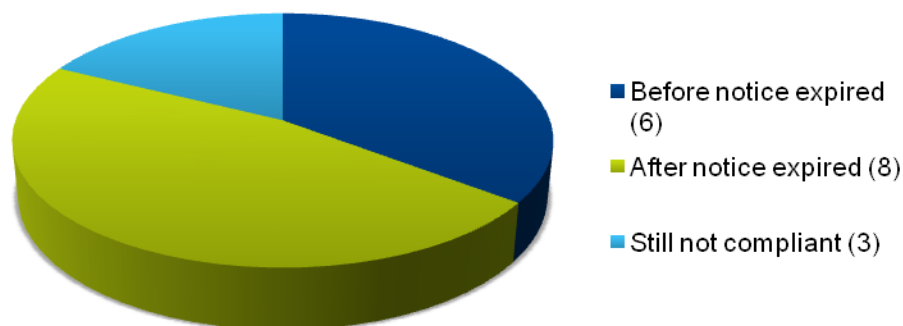
### Serving notices

Before serving notice on an undertaker we send a final letter to inform them that enforcement action is being considered. We call this a 'final letter before enforcement action'. Since 1 April 2011 we have sent out 43 of these letters; 11 regarding reservoirs in Wales and 32 regarding reservoirs in England. In 22 cases, receipt of the letter prompted the undertaker to comply with the Act.

Where we are unable to persuade undertakers to make the relevant appointments or complete the safety works by writing to them, we can serve notice to give them a deadline to comply. The chart below shows the number of undertakers we have served with notices. The chart also shows whether they complied before or after the deadline given in the notice.



## The number of reservoirs compliant following notice



**Table 3:** Number of notices served 1 April 2011 – 31 March 2013

Contravention of the Act notices served				
Section of the Reservoirs Act 1975	Non-compliance	Total number of notices served between 1 April 2011 and 31 March 2013		
		Total	England	Wales
8(1)	No construction engineer appointed	1	1	0
10(7)(a)	No inspection carried out and report made	3	3	0
10(7)(b)	Measures to be taken in the interests of safety not carried out	50	33	17
12(4)	No supervising engineer appointed	4	4	0
	<b>Total number of notices served</b>	58	41	17

The above table shows the number of notices that we have served between 1 April 2011 and 31 March 2013. We do not take any further action if undertakers comply with a notice. Over the past two years we have served 58 notices at 17 reservoirs and we have taken the following action for each of these non-compliant reservoirs after serving notice:

- No prosecutions taken
- One formal caution issued
- One formal warning letter issued
- Ten cases where no further action was taken

There are six reservoirs where notices have yet to expire.

Comparing these figures to the 2009 – 2011 Biennial report, we have seen a decrease of over 35% in notices served.

**Table 4:** Number of reservoirs where notices have been served

<b>Notices served by dam category</b>				
<b>Dam category (see page 34)</b>	Potential effect of dam breach	Total number of reservoirs where notice has been served		
		Total	England	Wales
<b>A</b>	Where a breach could put lives at risk	7	5	2
<b>B</b>	Where a breach could endanger lives not in a community or could result in extensive damage	5	4	1
<b>C</b>	Where a breach could pose little risk to life and limited damage	5	5	0
<b>D</b>	Special cases where no loss of life can be foreseen as a result of a breach and very limited additional flood damage could be caused	0	0	0
	Total number of reservoirs	17	14	3

The above table shows the number of reservoirs of category A to D for which we have served notices between 1 April 2011 and 31 March 2013. Some reservoirs have had multiple notices served, which are identified in Appendix 1.

**Table 5:** Number and type of undertakers served notice

<b>Notices served – undertaker type</b>				
<b>Undertaker type</b>	Examples	Total number of undertakers		
		Total	England	Wales
<b>Agriculture</b>	Farms, fish farms	4	4	0
<b>Industrial</b>	Manufacturing and chemical companies	4	4	0
<b>Other/unknown</b>	Unknown undertakers or notices served on 'any undertaker' and placed on site	0	0	0
<b>Private landowner</b>	Individuals, estates	5	5	0
<b>Public utility</b>	Local authorities, National Parks	3	0	3
<b>Registered charity</b>		0	0	0
<b>Water company</b>		0	0	0
	Total number of undertakers	16	13	3

The above table shows the number of undertakers of each type which we have served notices to between 1 April 2011 and 31 March 2013. Some reservoir undertakers have had multiple notices served, which are identified in Appendix 1.

A full list of non-compliant reservoirs is shown in Appendix 1 'Steps taken to secure compliance'. Appendix 2 shows an update on cases outstanding from the 2009-2011 biennial report.

Where we have no alternative, we have used our reserve and emergency powers under sections 15 and 16 of the Act to:

- Appoint supervising engineers for 4 reservoirs;
- Appoint a qualified civil engineer (inspecting engineer) to carry out 2 statutory inspections;
- Appoint a qualified civil engineer (inspecting engineer) to supervise the carrying into effect of measures in the interests of safety for 1 reservoir

**Table 6:** Engineers appointed by the Environment Agency under section 15 and 16 powers.

<b>Appointment of engineers under reserve and emergency powers</b>				
<b>Appointment of engineer under section 15 and 16 reserve and emergency powers following failure of undertaker to appoint under Reservoirs Act 1975 section</b>	Non-compliance	Total number of appointments		
		Total	England	Wales
<b>10(7)(a)</b>	No inspecting engineer appointed	1	0	2
<b>10(7)(b)</b>	Measures in the interests of safety not carried into effect	1	1	0
<b>12(4)</b>	No supervising engineer appointed	4	3	1
	Total number of appointments	6	4	3

### How we work

Over the past two years we have made more site visits to meet reservoir undertakers. We have found that being present at the reservoir whilst explaining to undertakers what they need to do to comply with the Reservoirs Act has improved their understanding. This means that undertakers are more likely to complete measures in the interests of safety as they understand how important reservoir safety is. We have found that we have served fewer notices to get works done.

We have discussed reservoir safety with a number of different undertakers over the past two years. In one case the company that owned a reservoir had gone into receivership and we worked with the receivers appointed under the Law and Property Act to make sure the correct engineers were appointed under the Reservoirs Act 1975.

### Orphan reservoirs

In 2011 we undertook works at Sunderton Pool. Sunderton Pool is a reservoir near Shrewsbury. It was bought by a fishing club which became insolvent. The fishing club's land reverted to the Crown. The Crown can refuse to take ownership of land if it believes that the land would be an onerous asset. In this case we made sure that a supervising engineer was appointed at all times under section 15 of the Reservoirs Act 1975. The last inspecting engineer had recommended a number of measures to be taken in the interests of safety. There was no undertaker to do the works on the ownerless land so we stepped in using our reserve and emergency powers. The works were completed within ten weeks.

### **Environment Agency reservoirs**

The Environment Agency is the undertaker for 207 large raised reservoirs in England.

There was a single reservoir with overdue measures - Warnham Mill Pond in South East region. The Environment Agency was declared a joint undertaker of this already non-compliant reservoir on 3 June 2011 along with the previous registered undertaker, Horsham District Council, and a private landowner.

This reservoir was non-compliant with the Act due to a Measure in the Interest of Safety (a detailed flood assessment) being overdue since April 2010. This reservoir is now compliant and further details are given in Appendix 3.

## 4. The future

On 1 April 2013, Natural Resources Wales (NRW) took over as enforcement authority for the Reservoirs Act 1975 in Wales. This is the last biennial report that we will produce covering both England and Wales.

On 30 July 2013, the Flood and Water Management Act 2010 changed how reservoirs will be managed and regulated in England. The changes mean reservoir safety will be assessed based on risk rather than the size of the reservoir. This means only large raised reservoirs that are high-risk will be subject to the full regulatory requirements of the Reservoirs Act 1975.

Other large raised reservoirs will be deregulated, with no related inspection or supervision responsibilities. However, deregulated reservoirs will still need to be registered in case of changes which alter the risk designation, such as downstream development.

The Environment Agency is the body responsible for enforcing reservoir safety legislation in England. As part of the changes, we are required to assess whether a large raised reservoir is high-risk. This is one that we think, in the event of an uncontrolled release of water from the reservoir, could endanger human life.

We cannot advise as to when any specific reservoir will be assessed, although we do aim to prioritise those that will be deregulated. We expect the provisional designation process for all 1,960 large raised reservoirs in England to be completed by April 2015. Whilst this process is underway the requirements of the Reservoirs Act 1975 continue to apply to all large raised reservoirs.

We are working on a replacement for our database which should make it easier for our staff to access information about reservoirs and respond to queries.

## 5. Appendices

**Appendix 1** – Steps taken by the enforcement authority to ensure that undertakers observe and comply with the requirements of the Reservoirs Act 1975

Reservoir	Undertaker	Type	Location	Country	Number of notices served under Reservoirs Act 1975 section					Appointment of engineer under section 15 reserve powers following failure of undertaker to appoint under Reservoirs Act 1975 section		Enforcement outcome	Compliance status as of 31 March 2013	Comment
					8(1)	10(7)(a)	10(7)(b)	12(4)	16(3)	10(7)(b)	12(4)			
<b>Haygrove Farm (New Pond)</b>	Haygrove Ltd	Agriculture (farms and fish farms)		England			4					No further action	Compliant	Discontinuance (13(2)) certificate received
<b>Orchardleigh</b>	Orchardleigh Estates Ltd	Private landowner		England			7					Under investigation	Non-compliant	4 of the notices served in error
<b>Fish Pond (Gnoll)</b>	Neath Port Talbot County Borough Council	Public utility		Wales			4					No further action	Compliant	10(6) received before notices expired
<b>Reservoir A</b>	Undertaker A	Private landowner		England		1		1				No further action	Compliant	Appointments made soon after notice expired
<b>Park Reservoir</b>	Curley's Fisheries Ltd	Agriculture (farms and fish farms)		England			1					No further action	Compliant	Works completed before notice expired
<b>Big Waters, Fawsley</b>	Trustees of Fawsley Estate Settlement	Private landowner		England			7					No further action	Compliant	Works completed before notices expired
<b>Marlbrook Quarry</b>	Liberty Construction Ltd	Industrial		England			6	1				Warning letter	Compliant	Warning letter sent for failing to appoint SE under s12(4). New s10 report received superseding

														notices
<b>Ingon Manor</b>	Cantella Farms Ltd	Agriculture (farms and fish farms)		England	1							No further action	Compliant	Construction engineer appointed soon after notice had expired
<b>Reservoir B</b>	Private individual B	Private landowner		England			2					No further action	Compliant	Works completed before notices expired
<b>Flour Mill</b>	Flintshire County Council	Public utility		Wales			1					Under investigation	Non-compliant	
<b>Reservoir C</b>	Private individual C	Agriculture (farms and fish farms)		England		1		1				No further action		Further investigation revealed that the reservoir was just outside the Act
<b>Mill Lodge reservoir</b>	Blackburn Mill Ltd	Industrial		England		1						No further action	Compliant	Inspecting engineer appointed before notice expired
<b>Luton Hoo Lake Upper</b>	Luton Hoo Park Ltd	Industrial		England			1					Under investigation	Non-compliant	
<b>Luton Hoo Lake Lower</b>	Luton Hoo Park Ltd	Industrial		England			1					Under investigation	Non-compliant	
<b>Birtle Upper</b>	Pinnacle Living2 Ltd	Industrial		England				1				No further action	Compliant	Appointment made before notice expired
<b>Reservoir D</b>	Private individual D	Private landowner		England			4					Under investigation	Non-compliant	Notices have not expired
<b>Reservoir E</b>	Private individuals E & F and local council	Private landowners and public utility		Wales			12					Under investigation	Non-compliant	Notices have not expired
				Totals	1	3	50	4						

## Appendix 2 – update on non-compliant cases in appendix 1 of the 2009-2011 biennial report

Reservoir	Undertaker	Type	Location	Country	Number of notices served under Reservoirs Act 1975 section					Appointment of engineer under section 15 reservoir powers following failure of undertaker to appoint under Reservoirs Act 1975 section		Enforcement outcome	Compliance status as of 31 March 2013	Comment
					8(1)	10(7)(a)	10(7)(b)	12(4)	16(3)	10(7)(b)	12(4)			
<b>Carburton</b>	The Welbeck Estates Co. Ltd	Private landowner	Worksop	England			10					No further action	Compliant	10(6) certificate received
<b>Great Lake</b>	The Welbeck Estates Co. Ltd	Private landowner	Worksop	England			9					No further action	Compliant	10(6) certificate received
<b>Carburton Forge</b>	The Welbeck Estates Co. Ltd	Private landowner	Worksop	England			6					No further action	Compliant	10(6) certificate received
<b>Fish Pond</b>	Supatrust Ltd	Private landowner	Crawley	England			4					Emergency works carried out and undertaker re-charged	Compliant	10(6) certificate received
<b>Reservoir 11</b>	Private individual 8	Private landowner	Kent	England			1					No further action	Compliant	10(6) certificate received
<b>Ty Isaf Upper (Banc Melyn) ID19</b>	Other/unknown	Other/unknown	Newtown	Wales			1			1	1	Under investigation. Undertaker still not known	Non-compliant	SE appointment maintained by the Environment Agency.
<b>Reservoir 14</b>	Private individual 11	Private landowner	Shropshire	England			2					No further action	Compliant	10(6) certificate received
<b>Reservoir 15</b>	Private individual 11	Private landowner	Shropshire	England			1					No further action	Compliant	10(6) certificate received
<b>Upper Hartleton Farm reservoir</b>	MWC Holdings Ltd	Private landowner	Ross-on-Wye	England				1			1	Warning letter issued	Compliant	
<b>Reservoir 16</b>	Private individuals 12 +13 +14	Private landowner + public utility	Essex	England			8					No further action	Compliant	



## Appendix 3 – Environment Agency compliance

Reservoir	Dates non-compliant	Current compliance status	Notes	Remedy
Warnham Mill Pond	3/6/2011- 19/09/13	Compliant	The Environment Agency was found to be a joint undertaker. There is a measure in the interest of safety outstanding.	A new section 10 report was produced and remedial works are planned in for 2014.

Appendix 4 – Report submitted by the Environment Agency, for **England** and **Wales**, in its capacity as enforcement authority for the Reservoirs Act 1975, to Defra/Welsh Government, for the two year period ending 31 March 2013

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/2009	Number on 05/04/2011	Number on 05/04/2013	Description
Statistics for all reservoirs							
1	Total number of 'large raised reservoirs' (LRRs)	1,924	2,010	2,093	2,115	2,145	The number of reservoirs that are 'in operation', 'abandoned' and 'under construction'
2	Total number of 'under construction' reservoirs	95	101	106	117	132	Includes both new reservoirs and those being modified
3	Total number of 'abandoned' reservoirs	-	3	3	4	4	Although empty, an 'abandoned' reservoir is still capable of holding at least 25,000m <sup>3</sup> of water above natural ground level
4	Total number of 'discontinued' reservoirs	-	210	234	256	265	
5	Total number of 'proposed' reservoirs	8	15	21	38	49	These are locations at which a LRR may be constructed in the future
6	Total number of undertakers	614	710	759	763	792	
7	Total number of LRRs for which the Environment Agency is the undertaker	129	167	184	194	203	
Supervising engineer (SE) appointments							
8	Total number of LRRs with no SE	48	45	6	6	12	
Inspecting engineer (IE) appointments							

9	Number of LRRs for which the next Section 10 Insp report is overdue	122	188	153	56	14	All reservoirs have to be inspected periodically, by an IE, at intervals no greater than ten years. This includes cases in which an IE has been appointed, but a 10(5) certificate has not yet been issued
10	Number of LRRs for which the next S10 Insp report is overdue, for which an inspection and report is in progress	-	148	148	55	2	Reservoirs where an IE has been appointed, but a 10(5) certificate has not yet been received
11	Number of LRRs for which the next S10 Insp has been overdue for at least one year	52	33	70	14	1	Whilst this does not represent a 'non-compliance' under the Reservoirs Act 1975, a certificate has not yet been issued and the inspection process is therefore incomplete. Includes reservoirs where an IE has been appointed as well as those where an IE has not been appointed
12	Number of LRRs for which the next S10 Insp has been due for at least one year, for which an IE has NOT been appointed	-	2	3	0	1	
13	Number of LRRs for which the next S10 Insp has been due for less than one year for which an IE has NOT been appointed	-	-	2	1	13	
Measures to be taken in the interests of safety (MIOS)							
14	Total number of LRRs with MIOS, including those within the 'target period' set by the IE	292	306	336	299	222	MIOS are essential works identified by an IE during an inspection carried out under section 10 of the Reservoirs Act 1975. The undertaker is legally required to implement MIOS*
15	Number of LRRs with MIOS that are still outstanding even though the target period has elapsed	-	50	45	42	39	
16	Number of LRRs with MIOS for which there is no target date but which have been outstanding for at least five years	-	8	7	1	3	These are subject to the enforcement process. If MIOS are still outstanding five years after the section 10 report it is considered that they may not have been implemented 'as soon as practicable'

\* This figure does not represent a non-compliance, just the total number of reservoirs that have measures identified, not all of which are outstanding beyond their target date. This figure will naturally vary according to how often engineers are identifying works that need doing at reservoirs, and we have no control over this. It is not a figure to be concerned about, unless the work is not done.

Distribution of dam category			
Risk category	Number of LRRs	% of total number of LRRs	Notes (Reference: Floods and Reservoir Safety; ICE 1996)
<b>A</b>	766	35.7	At least ten lives at risk and extensive property damage
<b>B</b>	320	14.9	Fewer than ten lives at risk but extensive property damage
<b>C</b>	461	21.5	Negligible risk to human life but property damage
<b>D</b>	253	11.8	Negligible risk to human life and very limited property damage
<b>Not applicable</b>	113	5.3	Historically, only impounding reservoirs have been assigned a risk category. Although this has changed, and the risk posed by all reservoirs is now being considered, some non-impounding and service reservoirs have not yet been assigned a risk category
<b>Unknown</b>	232	10.8	Section 10 Inspection reports, in which risk category information is normally supplied, are not available for all reservoirs (because the reports do not contain MIOS, and do not need to be submitted to the Enforcement Authority)
<b>Totals</b>	<b>2,145</b>	<b>100</b>	

Distribution of undertaker type		
Undertaker type	Number of LRRs	% of total number of LRRs
<b>Agriculture (Farms and fish farms)</b>	253	11.7
<b>Environment Agency</b>	203	9.5
<b>Industrial</b>	105	4.9
<b>Other Government Agency</b>	44	2.0
<b>Other/unknown*</b>	4	0.2
<b>Private landowner</b>	416	19.4
<b>Private utility</b>	28	1.3
<b>Public utility</b>	205	9.6
<b>Registered charity</b>	147	6.9
<b>Water company</b>	740	34.5
<b>Totals</b>	<b>2,145</b>	<b>100</b>

\*Disclaimed (orphan) reservoirs

**Appendix 5** – Report submitted by the Environment Agency, for England only, in its capacity as enforcement authority for the Reservoirs Act 1975, to Defra for the two-year period ending 31 March 2013

Reference	Description	Number on 31/03/2005	Number on 30/03/2007	Number on 02/04/2009	Number on 05/04/2011	Number on 05/04/2013	Description
<b>Statistics for all English reservoirs</b>							
1	Total number of 'large raised reservoirs' (LRRs)	1,715	1,799	1,889	1,913	1,944	Comprises those reservoirs that are 'in operation', 'abandoned', and 'under construction'
2	Total number of 'under construction' reservoirs	93	99	102	115	131	Includes both new reservoirs and those being modified
3	Total number of 'abandoned' reservoirs	-	3	3	4	3	Although empty, an 'abandoned' reservoir is still capable of holding at least 25,000m <sup>3</sup> of water above natural ground level
4	Total number of 'discontinued' reservoirs	-	175	191	210	219	
5	Total number of 'proposed' reservoirs	-	14	19	37	47	These are locations at which a LRR may be constructed in the future
6	Total number of undertakers	431	644	691	708	736	
7	Total number of LRRs for which the Environment Agency is the undertaker	124	161	180	189	198	
<b>Supervising Engineer (SE) appointments</b>							
8	Total number of LRRs with no SE	44	40	6	4	10	
<b>Inspecting Engineer (IE) appointments</b>							
9	Number of LRRs for which the next Section 10 inspection (S10 Insp) report is overdue	115	166	138	46	12	All reservoirs have to be inspected periodically by an IE, at intervals no greater than ten years. This includes cases in which an IE has been appointed, but a 10(5) certificate has not yet been issued.
10	Number of LRRs for which the next S10 Insp report is overdue, for which an inspection and report is in progress	-	129	134	45	0	
11	Number of LRRs for which the next S10 Insp has been overdue for at least	51	29	64	10	0	

	one year						
12	Number of LRRs for which the next S10 Insp has been due for at least one year, for which an IE has NOT been appointed	-	1	3	0	0	
13	Number of LRRs for which the next S10 Insp has been due for less than one year for which an IE has NOT been appointed	-	-	1	1	12	
<b>Measures to be taken in the interests of safety (MIOS)</b>							
14	Total number of LRRs with MIOS, including those within the 'target period' set by the IE	278	277	303	267	199	MIOS are essential works identified by an IE during an inspection carried out under section 10 of the Reservoirs Act 1975. The undertaker is legally required to implement MIOS*
15	Number of LRRs with MIOS that are still outstanding even though the target period has elapsed	-	49	40	41	35	
16	Number of LRRs with MIOS for which there is no target date but which have been outstanding for at least five years	-	5	5	1	3	These are subject to the enforcement process. If MIOS are still outstanding five years after the section 10 report it is considered that they may not have been implemented 'as soon as practicable'

\* This figure does not represent a non-compliance, just the total number of reservoirs that have measures identified, not all of which are outstanding beyond their target date. This figure will naturally vary according to how often engineers are identifying works that need doing at reservoirs, and we have no control over this. It is not a figure to be concerned about, unless the work is not done.

Distribution of dam category			
Risk category	Number of LRRs	% of total number of LRRs	Notes (Reference: Floods and Reservoir Safety; ICE1996)
<b>A</b>	678	34.9	At least ten lives at risk and extensive property damage
<b>B</b>	278	14.3	Fewer than ten lives at risk but extensive property damage
<b>C</b>	422	21.7	Negligible risk to human life but property damage
<b>D</b>	234	12	Negligible risk to human life and very limited property damage
<b>Not applicable</b>	105	5.4	Historically, only impounding reservoirs have been assigned a risk category. Although this has changed, and the risks posed by all reservoirs are now being considered, some non-impounding and service reservoirs have not yet been assigned a risk category
<b>Unknown</b>	227	11.7	Section 10 Inspection reports, in which risk category information is normally supplied, are not available for all reservoirs (because the Reports do not contain MIOS, and do not need to be submitted to the Enforcement Authority)
<b>Totals</b>	1,944	100	

Distribution of undertaker type		
Undertaker type	Number of LRRs	% of total number of LRRs
<b>Agriculture (Farms and fish farms)</b>	250	12.9
<b>Environment Agency</b>	198	10.1
<b>Industrial</b>	85	4.4
<b>Other Government Agency</b>	35	1.8
<b>Other/unknown*</b>	2	0.1
<b>Private landowner</b>	385	19.8
<b>Private utility</b>	16	0.8
<b>Public utility</b>	182	9.4
<b>Registered charity</b>	145	7.5
<b>Water company</b>	646	33.2
<b>Totals</b>	1,944	100

\* Disclaimed (orphan) reservoirs

**Appendix 6** – Report submitted by the Environment Agency, for Wales only, in its capacity as enforcement authority for the Reservoirs Act 1975, to the Welsh Government, for the two-year period ending 31 March 2013

Reference	Description	Number on 31/3/2005	Number on 30/3/2007	Number on 2/4/2009	Number on 5/4/2011	Number on 5/4/2013	Notes
<b>Statistics for all Welsh reservoirs</b>							
1	Total number of 'large raised reservoirs' (LRRs)	204	211	204	202	201	Comprises those reservoirs that are 'in operation', 'abandoned' and 'under construction'
2	Total number of 'under construction' reservoirs	2	2	4	2	1	Includes both new reservoirs and those being modified
3	Total number of 'abandoned' reservoirs	-	0	0	0	1	Although empty, an 'abandoned' reservoir is still capable of holding at least 25,000m <sup>3</sup> of water above natural ground level
4	Total number of 'discontinued' reservoirs		35	43	46	46	
5	Total number of 'proposed' reservoirs	-	1	2	1	2	These are locations at which a LRR may be constructed in the future
6	Total number of undertakers	-	66	68	65	65	
7	Total number of LRRs for which the Environment Agency is the undertaker	4	6	4	5	5	
<b>Supervising engineer (SE) appointments</b>							
8	Total number of LRRs with no SE	4	5	0	2	2	
<b>Inspecting engineer (IE) appointments</b>							
9	Number of LRRs for which the next Section 10 inspection (S10 Insp) report is overdue	7	22	15	10	2	All reservoirs have to be inspected periodically, by an IE, at intervals no greater than ten years. This includes cases in which an IE has been appointed, but a 10(5) certificate has not yet been issued
10	Number of LRRs for which the next S10 Insp report is overdue, for which an inspection and report is in progress	-	19	14	10	2	Reservoirs where an IE has been appointed, but a 10(5) certificate has not yet been received
11	Number of LRRs for which the next S10 Insp has been overdue for at least one year	1	4	6	4	1	Whilst this does not represent a 'non-compliance' under the Reservoirs Act 1975, a certificate has not yet been issued and the inspection process is therefore incomplete. Includes reservoirs where an IE has been appointed as well as those where an IE has not been appointed
12	Number of LRRs for which the next S10	-	1	0	0	1	

	Insp has been due for at least one year, for which an IE has NOT been appointed						
<b>13</b>	Number of LRRs for which the next S10 Insp has been due for less than one year for which an IE has NOT been appointed	-	-	1	0	1	
<b>Measures to be taken in the interests of safety (MIOS)</b>							
<b>14</b>	Total number of LRRs with MIOS, including those within the 'target period' set by the IE	14	29	33	32	23	MIOS are essential works identified by an IE during an inspection carried out under section 10 of the Reservoirs Act 1975. The undertaker is legally required to implement MIOS*
<b>15</b>	Number of LRRs with MIOS that are still outstanding even though the target period has elapsed	-	1	5	5	4	
<b>16</b>	Number of LRRs with MIOS for which there is no target date but which have been outstanding for at least five years	-	3	2	0	0	

\* This figure does not represent a non-compliance, just the total number of reservoirs that have measures identified, not all of which are outstanding beyond their target date. This figure will naturally vary according to how often engineers are identifying works that need doing at reservoirs, and we have no control over this. It is not a figure to be concerned about, unless the work is not done.



Distribution of dam category			
Risk category	Number of LRRs	% of total number of LRRs	Notes (Reference: Floods and Reservoir Safety; ICE 1996)
A	88	43.8	At least ten lives at risk and extensive property damage
B	42	20.9	Fewer than ten lives at risk but extensive property damage
C	39	19.4	Negligible risk to human life but property damage
D	19	9.5	Negligible risk to human life and very limited property damage
Not applicable	8	3.9	Historically, only impounding reservoirs have been assigned a risk category. Although this has changed, and the risks posed by all reservoirs are now being considered, some non-impounding and service reservoirs have not yet been assigned a risk category
Unknown	5	2.5	Section 10 inspection reports, in which risk category information is normally supplied, are not available for all reservoirs (because the Reports do not contain MIOS, and do not need to be submitted to the Enforcement Authority)
<b>Totals</b>	<b>201</b>	<b>100</b>	

Distribution of undertaker type		
Undertaker type	Number of LRRs	% of total number of LRRs
Agriculture (farms and fish farms)	3	1.5
Environment Agency	5	2.5
Industrial	20	9.9
Other Government agency	9	4.5
Other/unknown*	2	1.0
Private landowner	31	15.4
Private utility	12	6.0
Public utility	23	11.4
Registered charity	2	1.0
Water company	94	46.8
<b>Totals</b>	<b>201</b>	<b>100</b>

\* Disclaimed (orphan) reservoirs

**Notes****1 – Dam category**

<b>Dam category</b>	<b>Potential effect of a dam breach</b>
<b>A</b>	Where a breach could endanger lives in a community
<b>B</b>	Where a breach could endanger lives not in a community or could result in extensive damage
<b>C</b>	Where a breach would pose negligible risk to life and cause limited damage
<b>D</b>	Special cases where no loss of life can be foreseen as a result of a breach and very limited additional flood damage would be caused
<b>U</b>	Unknown

**2 – Reservoirs Act 1975 sections**

- 8(1) No construction engineer appointed
- 10(7)(a) No inspection and report
- 10(7)(b) Measures to be taken in the interests of safety not carried into effect
- 12(4) No supervising engineer appointed

**3 – Enforcement outcomes**

Under investigation

No further action

Written warning

Formal caution

Prosecution

**4 – Reservoir Enforcement and Surveillance System undertaker definitions**

<b>Undertaker type</b>	<b>Examples</b>
<b>Other/unknown</b>	
<b>Private landowner</b>	Trusts, limited companies, recreational bodies, individuals, estates
<b>Agriculture (farms &amp; fish farms)</b>	Farms, fish farms
<b>Public utility</b>	Local authorities, National Parks
<b>Water company</b>	
<b>Industrial</b>	Manufacturing and chemical companies
<b>Private utility</b>	Power generator company
<b>Registered charity</b>	National Trust
<b>Environment Agency</b>	
<b>Other Government agency</b>	MoD, Forestry Commission, Crown Estates

**5 – Data protection**

We have listed those undertakers that are limited companies, local authorities and charities.

The Data Protection Act 1998 does not permit us to publish the names of private individuals, including partnerships and sole traders.

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