



Research Report

# Volunteers' contribution to flood resilience

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This report presents findings from a research project undertaken by Forest Research for the Environment Agency (EA) on 'Investigating and appraising the involvement of volunteers in achieving Flood and Coastal Risk Management (FCRM) outcomes'. The aim was to develop a consistent approach to evaluating the benefits of working with volunteers as part of FCRM activities in England. The research is helping the EA understand how it can work with partners and volunteers, and informing the development of future guidance to support EA staff. The methods included a background review of FCRM volunteering (97 examples were identified), a prototype evaluation framework, an on-line survey of FCRM volunteers, the use of volunteer activity diaries, and four case studies (involving interviews, document analysis and visits). Sixty-three volunteers participated in the survey and 61 were involved in the interviews and diaries. Twenty staff from the EA and its partner organisations were also interviewed and two workshops run with EA staff. Four reports and three resources outlining the research have been prepared (see References). Survey participants were predominantly male (72%), aged over 54 years (84%), retired (68%) and living in rural areas (63%). The evaluation framework comprises a set of criteria and indicators (input, output, outcome and process) and accompanying evaluation protocols. It is intended as a resource for the EA to evaluate future FCRM volunteering initiatives, demonstrate the range of benefits they deliver, and identify success factors and areas for improvement. Overall, the research highlights the important contribution that volunteers can make to flood resilience. To realise these benefits, the value of this contribution needs to be better understood and incorporated into decision-making so that volunteers can be managed and supported effectively by the EA and the partner organisations it works with.

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## Why engage volunteers in flood risk management

Volunteering is a well established approach in environmental management. Our review of the scientific literature revealed a lack of information about volunteering in connection with floods. Collecting evidence from the EA and secondary sources provided examples of 97 projects across the country which involved volunteers in flood risk management. The projects revealed gaps in data and understanding around the specific motivations and benefits of flood risk volunteering, and associated costs. Survey and case study research aimed to fill this gap.

Our research shows that volunteers undertake a wide range of activities, before, during and after flood events, which can enhance FCRM outcomes, including:

- monitoring rainfall, river or tide levels and reporting data to the EA,
- participating in a flood group or forum to develop flood plans,
- raising awareness and passing on flood warnings to the community, including through social media,
- operating and maintaining EA assets such as flood gates and pumps;
- physical action to clear shrubbery, and debris from culverts, drains and the banks of rivers,
- specialist contributions including the design and construction of engineering solutions to flood problems.

Data from the survey and case studies reveal that volunteers are clearly adding value in terms of building community resilience and preparedness – all of which are helping to make communities' more self reliant.

**Benefits to the EA** – volunteers provide essential local knowledge concerning flood risks, acting as the EA's 'eyes and ears' on the ground. They have a function in the operation of EA assets, and are key elements in local support networks, providing links to vulnerable people and groups and helping to get messages out to their communities. When managed well, they can help improve public perceptions of the EA.

**Benefits to partner organisations** – volunteers can ensure flood plans and community emergency plans are prepared realistically, have local buy-in, and are implemented effectively. Volunteers can work alongside emergency services, e.g. to provide awareness and training that helps evacuations run as smoothly as possible.

*'The benefits of volunteers are massive and outstrip the resources the Council puts in place to inform people about flooding' [Local Authority interviewee, Lincolnshire]*

**Benefits to local communities** – volunteers and flood groups provide communities with communication channels to the authorities associated with flooding. They help communities become more aware of flood risks and the likelihood that flooding will occur again in the future. Communities benefit from the skills, experience, leadership and commitment of volunteers, e.g. by helping them to organise into groups, prepare flood plans, and share knowledge, information and support. Volunteers encourage local people to sign up to Flood Warnings Direct.

*'There is a network of experts taking notice, it's a bit more than the eyes and ears of the community there's a lot more understanding and reasoning going on. We know our catchments much better now and I think that is spreading out to other people as well' [Volunteer interviewee, Cornwall]*

*'We helped people with the trauma and the emotional strain and stress of flooding. It eased problems as it was a shared experience' [Volunteer interviewee, South Yorkshire]*

**Benefits to volunteers** – as well as the instrumental benefits of volunteering to the EA and its partners, the individuals themselves gain from the experience in multiple ways:

- **Knowledge and understanding** – volunteering led to significant increases in understanding of: community flood risk (87%); the agencies responsible for flood risk (82%), and the levels of personal risk faced by people in the community (75%).
- **Connections, networks and trust** – three types of benefit were identified: doing something useful in the community; increasing trust in the EA and other agencies; and the benefits derived from meeting new people.
- **Individual well-being** – benefits included well-being connected to improved skills and knowledge (70%); a feeling of making a positive difference to the local environment (68%); and developing a sense of connection to their local environment (63%).
- **The environment** – 36% of volunteers who participated in the survey were involved in working to improve the physical environment.
- **Cost effective** – perceptions of the relevance, effectiveness and efficiency of FCRM volunteering were largely positive across all study respondents, including a range of EA staff, partner agency staff and the volunteers themselves.

## How to motivate and engage volunteers

Understanding the motivations behind FCRM volunteering can help the EA engage with them more effectively. A prime motivation for getting involved was the personal experience of flooding. Around three-quarters of volunteer respondents to the survey had become involved since the significant flooding events of 2007. These individuals were also the ones who reported contributing the most time to flood related work. Around 60% of volunteers said they have homes at risk of flooding. Nearly 50% of respondents had volunteered for more than five years, with 64% spending between one and five hours per month. A large proportion of the volunteers have an interest in the technical issues of flood risk management.

The top three motivations for volunteering in the survey were:

a) taking action to prevent flooding (40%), b) taking on a leadership role in a community's response to flooding (21%) and c) helping the local community (17.5%).

In the case studies, motivations included a desire to: a) care for the place they lived in, b) mitigate flood risk to protect lives and property, and c) respond to a sense of frustration that nobody else would do it unless they themselves did.

Nearly 50% were willing or wanted to undertake more FCRM volunteering. The level of commitment was high, with 44% of volunteers expecting to carry on their role beyond the next five years, and 42% of volunteers expecting to carry on for between two and five years.

Volunteers continue their activities (e.g. after an initial flood event) for selfless reasons related to: a) serving their community (33%), b) the continuing need for risk mitigation through flooding infrastructure improvements and maintenance (30%), and c) the ongoing need to maintain community preparedness (19%).

### Models of governance

A key question explored during the research concerned the models of volunteer engagement that would be most efficient and effective at delivering FCRM outcomes in different contexts. The research focused on four approaches identified by the EA:

- **Direct management by the EA** – outcomes are delivered directly for EA, who may provide training and support, although in practice there is likely to be some partnership working, e.g. with lead local flood authorities (Case study 1: Lincolnshire).
- **Working with partnerships** – the EA works directly with a range of partners to support volunteering as a means to deliver shared outcomes (Case study 2: Cornwall).
- **Working through others** – the EA provides resources, usually funding, for another organisation, such as a

social enterprise or charity, to work directly with volunteers to achieve EA objectives better (Case study 3: Sheffield).

- **Communities and volunteers working for themselves** – individuals/groups decide to take action themselves, often through encouragement from the EA, and are then supported by the EA and its partners, to increase local resilience in ways that benefit themselves, the EA and other risk-management agencies (Case study 4: Bodenham).

These four governance approaches provide a range of ways for the EA to engage with volunteers, allowing adaptation to local context and opportunities. The case studies show how this is working in different communities (see below). In the **Lincolnshire** case study (Case study 1) motivated individuals came forward, often after a flood event, and were successfully supported by the EA in partnership with others. A key element of success for both the **Bodenham** and **Cornwall** case studies (Case studies 2 and 4) was the leadership shown by a small number of local community members. Taking a multi-agency approach was critical to the success of the Cornwall Community Flood Forum which has forged effective relationships between a range of organisations and community groups. The River Stewardship Company case study in **Sheffield** (Case study 3) shows how it is drawing on diverse funding sources to deliver its work through a combination of long-term and casual volunteers.

The case studies suggest a common narrative whereby flood events act as a catalyst for action, leading to the emergence of recovery groups that allow the EA and its partners to work with and support specific communities. From this experience, volunteers come forward wanting to get involved, or are recruited by EA. This involvement evolves over time through a period of relatively intensive activity soon after flooding, before settling into an on-going maintenance and innovation phase characterised by high levels of community resilience and self-reliance. A diverse range of partner agencies also become involved.

### Value for money

We asked volunteers, EA FCRM staff at local/area level and regional/national level, and partner organisation staff (n=111) to answer statements about their perceptions of the value for money of FCRM volunteering in terms of its relevance, effectiveness and efficiency. In terms of relevance, all respondents felt that volunteering makes a significant positive contribution to flooding. A negative score for resourcing of volunteering was given by the EA local/area staff, in marked contrast to the positive score given by the EA managers at regional/national level. This illustrates a potential disconnect between staff on the ground feeling that they do not have enough resources to work with volunteers and managers within the EA who feel that sufficient resources are allocated to FCRM volunteering.

## Volunteering in practice

The four case studies focus on each of the governance approaches outlined above, and illustrate the diversity of action and practice that has evolved on the ground in different parts of England.

### Case study 1. 'Direct management by the EA': Lincolnshire Flood Warden Scheme

The Lincolnshire Flood Warden (FW) Scheme was set up approximately twenty years ago. The EA works in partnership with Lincolnshire County Council, other local authorities, Internal Drainage Boards (IDB) and the emergency services. The objectives identified for FWs are to assist with completion of a Parish or Town Council Community Emergency and Flood Plan, encourage households in the community to have personal emergency and flood plans, and sign up to Flood Warnings Direct. The EA trains FWs in partnership with local authorities and provides a manual and toolkit highlighting what being a FW involves. The activities of the volunteers included: providing information on Facebook and Twitter; monitoring water levels and providing feedback (sometimes with photographs) to the EA; raising awareness; helping to organise a flood fair; and helping to run a village consultation on flood risk. All of the FWs were motivated by an interest in understanding more about the technical details of flooding.

*'Flood Wardens are an excellent resource' [EA interviewee].*

*'Technically it's interesting and it's good to work with the EA. I have learnt a lot and it's worth doing while there is the opportunity to drive things forward and reduce the risk of future flood events' [Volunteer interviewee]*

The FWs make decisions about how much to do, how to identify vulnerable people in their communities and how to ensure they do not put themselves at risk as they undertake their activities. There was some confusion however about the role of the FW, and also concern that the flood warning system is not easy for all to understand.

Information on becoming a FW can be found at the Lincolnshire's Resilience Forum:  
<http://www.lincolnshire.gov.uk/lincolnshire-prepared/preparing-for-an-emergency/become-a-flood-warden/118331.article>

### Case study 2. 'Working in partnership' and 'Communities working for themselves': Cornwall Community Flood Forum and Local Flood Protection Groups

Widespread flooding in Cornwall in 2010 led to the creation of two flood recovery groups overseen by a strategic steering group with representatives from the EA, South West Water and Cornwall Council (CC). Due to community demand a

new association called the Cornwall Community Flood Forum (CCFF) was created in 2011. The Forum aims to raise flood awareness within Cornwall, support communities to be better prepared and promote a partnership approach to flood risk management and community engagement. The Forum is an association of flood risk management authorities (including the EA), businesses, community groups and Town and Parish Councils. A quarter of all the Town and Parish Councils in Cornwall are now members of the Forum. It has attracted over £230K of funding from Defra through a two-year Flood Resilience Pathfinder Project which seeks to trial low-cost initiatives to support households, businesses and communities that are at greatest risk of flooding, and help them become better prepared and more resilient. A training package is being developed which will outline the role of a volunteer before, during and after a flood event. The Forum, CC and the EA have recently run seven events across Cornwall focused on community emergency planning linked to the agenda of community resilience using flooding as a case study. Sixty community groups were represented at the events.

*'The linkage between the statutory organisations and the Town and Parish Councils and the people in the community who are key - I would single this out as the one thing the Forum has done that was not happening before'*  
[CC interviewee].

A core of volunteers in the local groups are extremely active. Two of the groups have created comprehensive flood plans that have been endorsed by CC and the EA. The Par and St Blazey Community Flood Group now has 80 volunteers, while the Mevagissey Flood Watch Group has grown to about 20 volunteers. Both groups have Facebook pages to keep their communities up-to-date on flood risks, and this is being used by the Cabinet Office to showcase the use of social media to build community resilience.

*'When we had extensive flooding across Cornwall I received calls direct from Silver Command in the middle of the night asking what the situation was like on the ground. I was able to roll out of bed, drive around the area and call back to say everything was clear, no flooding. It meant CC and the emergency services could allocate resources to where they were really needed. They trusted my information and I was their eyes and ears'*  
[Volunteer interviewee]

For CCFF, see:

<http://www.cornwall.gov.uk/default.aspx?page=31852>

Information on some of the flood groups can be found from the Cornwall Community Resilience Network:

<http://www.cornwall.gov.uk/default.aspx?page=32007>

### Case study 3. 'Working through others': River Stewardship Company

The River Stewardship Company (RSC) is a social enterprise formed in 2007 which works to improve the waterways in Sheffield for people and wildlife. Its income sources include grant funding, public service contracts and commercial contracts. The RSC addresses the issue of responsibility which exists in urban rivers where riparian ownership is split between multiple land owners and tenants, many of whom are unaware or not equipped to look after river channels or banks. The commercial challenge is how to persuade landowners to take responsibility and pay for a service when most assume responsibility rests with the Council or the EA. The RSC works with partners including the EA, Sheffield City Council and Sheffield Wildlife Trust. The EA is an advisory Board member to the RSC. The RSC works with volunteers in two distinct ways:

- 1) Voluntary River Stewards – volunteering on a long-term basis usually for nine months and two to three days a week. They work on flood resilience, and habitat and access improvements. They gain access to training and are provided with personal protective equipment and expenses for travel and subsistence. Candidates are interviewed to see if they are suitable for the role. There are a small number of these volunteers.
- 2) Casual volunteers – operate on an informal basis by taking part in volunteer days that are run every week. These volunteers are diverse and come to the RSC through a range of recruitment routes i.e. Voluntary Action Sheffield, NHS referrals, and housing associations.

The EA has been involved with and supportive of the RSC throughout its development. It was through delivering contracts and a three year partnership project with the EA that the RSC was able to establish itself as a company.

See the RSC website: <http://www.the-rsc.co.uk/about-rsc.aspx>

### Case study 4. 'Communities working for themselves': Bodenham Flood Protection Group

Bodenham is a small village north of Hereford, located in the flood plain of the River Lugg. The group was formed in response to major flooding in 2007. Villagers were deeply affected and realised they were unprepared for coping with this type of serious flood event. The first step in the group's formation was a post-flooding Parish Council meeting involving agencies such as the County Council, River Lugg IDB and the EA. The group formed itself as a sub committee of the Parish Council, which was important as it provided adequate public liability insurance. Two people who recently moved to the village were particularly important in motivating the village to take action. The group has grown to over 40 members. It aims to mitigate flood risks as well as plan action to help vulnerable members of

the community before, during and after flooding. Activities of the group include: undertaking a survey of flooded households; bringing landowners and households together to discuss better land and drainage management; application and management of a Defra grant for property level protection (PLP), and work groups to clear culverts and manage bankside vegetation, and fund-raising. UK Flood Barriers Ltd engaged with the group hosting them on visits to its offices, explaining solutions and providing PLP. The relationship between the group and the EA has developed in recent years, with the EA being instrumental in helping the group prepare its proposal for PLP. Through its monitoring, the group informs the EA about potential flood risk problems and as a result it better understands the EA and the limits of its responsibilities and capacities. There is a very strong social capital element and building of community cohesion through the social interaction generated by the group's regular work parties and social events.

*'We treat it to a degree socially. There are lots of times after we have done jobs, we stop for a few drinks and nibbles - It's social, it's not all work' [Volunteer interviewee]*



Flooding along the road and field margins running through to the Moor in Bodenham.

See the flood groups web pages:

<http://www.bodenhamparish.org.uk/bfpg-home.asp>

## Approaches to volunteering

The four case studies were selected to represent each of the governance models outlined above. However, the research revealed that it is difficult to describe any given example of FCRM by one of the four models. There is evolution and adaptation of governance. In areas with high flood risk recent years appear to have seen a change away from traditional direct management of volunteers by the EA, towards more complex arrangements. These aim to increase resilience, and are often characterised by 'working in partnership'. However, features of the other three models may be included. This trend has been driven in part by the Pitt Review, which drew lessons from the 2007 floods, and supported policy actions around flooding that concentrated on localism and community resilience. It also highlighted growing evidence of the benefits of volunteer engagement.

In areas of high flood risk, the evolution towards more complex approaches appears to be accompanied by a shift in:

- partnership working:** from the EA acting on its own, or with lead local flood agencies, towards multi-agency partnerships sharing resources and goals;
- scope of engagement:** from a narrow focus on flooding towards wider community resilience and community emergency planning, of which flooding is just one component (alongside crime, fire, snow, etc);
- motivations and benefits:** from an individual-focus ('traditional' volunteering) towards more of a community-focus ('community action');

- range of activities:** from activities managed through simple direct relationships with the EA, e.g. monitoring, asset management and habitat management, to encompass multiple additional roles, e.g. awareness, education, campaigning, planning, web-based work, etc.
- level of engagement:** from reactive recruitment of volunteers and communities towards proactive recruitment, and provision of support, with agency inputs declining after a few years as individual community groups become established.

Decisions made by the EA and its partners around FCRM – including how, when and where to engage with volunteers and communities – are based on assessments of risk. The multi-agency arrangements outlined above are likely to be more suited to areas of higher flood risk, requiring greater levels of engagement by the EA (at least initially) and by the communities themselves. Figure 1 depicts the range of approaches to FCRM volunteering in terms of the levels of EA and volunteer engagement (horizontal and vertical axes respectively). It shows how responses vary with level of risk, which, broadly speaking, increases from the bottom left quadrant to the top right. The matrix is dynamic. Which quadrant volunteers and the EA find themselves in at any one point is likely to change over time depending on factors such as - period since flood event, changes to flood risk, and cycles of volunteer recruitment and fund raising.

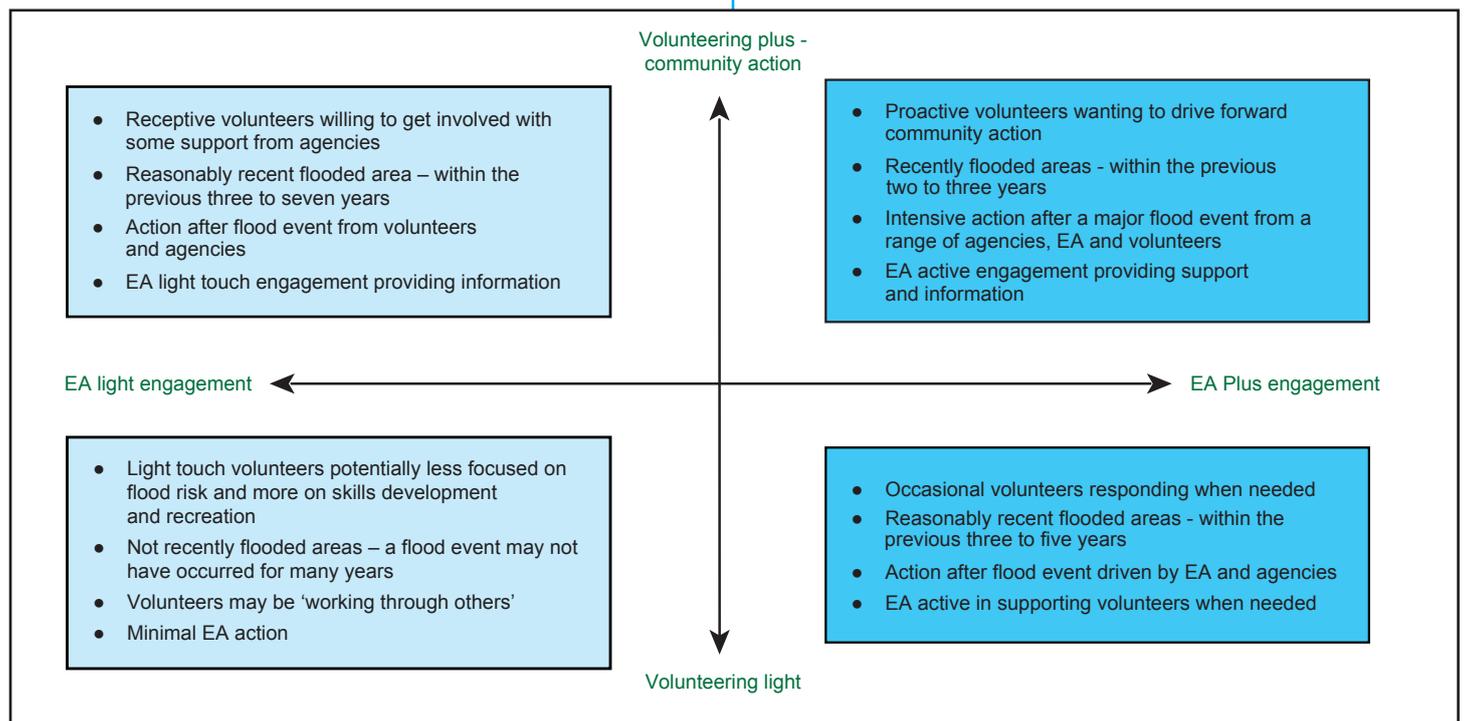


Figure 1: FCRM volunteer and EA engagement matrix.

## Issues and options

A number of opportunities were reported during the research whereby the EA could better understand, evaluate and improve its engagement with FCRM volunteers, both at a strategic and operational level. Many of these points stem from the diversity in approaches to volunteer engagement seen across the country.

**Balance a consistent approach with flexibility to local circumstances:** There is considerable variation in the forms of management and support provided to individual volunteers (e.g. FWs) and community groups. A key strategic issue is the extent to which a more consistent approach would be possible or necessary given the need to be responsive to local conditions, capacity and needs. Arguably, consistency is less important than transparency, which could be improved through more systematic data capture on local approaches to engagement. The disconnect of perceptions about the adequate resourcing of FCRM volunteering by EA local staff and EA managers illustrates the need for the EA to develop a consistent strategic approach to its views on FCRM volunteering.

**Transfer successful approaches:** Multi-agency partnerships with active volunteer involvement that have developed in Cornwall and elsewhere have been put forward as a model for other parts of the country. Interviewees highlighted how this approach has evolved organically through interaction between agencies and communities, and should not be imposed from above, but put forward as options as part of ongoing engagement work. Key features that could be transferrable include:

- working with Local Resilience fora which are multi-agency partnerships at county or regional level to oversee community resilience and emergency planning; ;
- forums of local agencies, Town & Parish councils, community groups and businesses to ensure wider local buy-in, and
- informal hubs in large rural settlements helping to coordinate communication and mobilise action among volunteers across neighbouring isolated communities.

**Capture the value of volunteering:** Decisions about the allocation of resources to FCRM volunteering are made on the basis of cost-benefit analyses, which fail to capture the often intangible, indirect and unseen ways in which FCRM volunteers avoid losses associated with flooding. The scope of economic analyses may need to be broadened, while qualitative and narrative evidence, including the Value For Money approach outlined above, may need to be presented more effectively. Detailed case studies, such as those presented in this research, could help make a one-off case at a strategic level.

**Monitoring and evaluation:** As well as qualitative evidence, there is a need for clear and consistent data to be kept on numbers of volunteers, contact details and roles, and how they are managed (directly or through another agency) to monitor the overall status of FCRM volunteering. More detailed assessment of profiles, activities, motivations, outputs and outcomes of volunteers would usefully be carried out every few years (using the evaluation framework developed by Forest Research) to help the EA identify what is working, and what roles the EA and its partners should play in different locations

**Clarify the roles of volunteer Flood Wardens:** Expected roles are evidently not clear to many FWs, before during and after flood events, and this needs to be addressed. Inspiring examples would help those with the time, capacity and interest to extend their roles, taking into account the considerable diversity of contexts in which FWs operate. Similarly, guidance is currently lacking to encourage interested individuals who are not yet engaged in FCRM volunteering. The role of a FW can be different in different contexts and communities, therefore any generic guidance should outline the need to take account of local circumstances and any relevant community plans.

**Recognition of FCRM volunteers:** Currently recognition of volunteers' work is ad hoc across the country, partly due to the diversity of agencies that manage them. Public acknowledgement at meetings and newsletters would help, but the EA should consider working with partners to thank volunteers in a more structured way, learning from agencies that have systems of rewards including acknowledgement of long service, Christmas meals etc.

**Reimbursement of expenses:** There is little consistency across the country in the reimbursement of expenses, such as travel to meetings, phone bills and photocopying, with many FWs covering these costs themselves. The principle of reimbursement was also seen as one way to demonstrate to volunteers that their work is valued.

**Insurance of volunteers:** Insurance is currently provided inconsistently by Parish and Town Councils, local authorities or individual flood groups. Clarity is sought on what kind of insurance is needed, the activities it should cover, who should arrange it and pay for it, and who should be providing this information to volunteers.

**Training of volunteers and staff:** Training and guidance is provided inconsistently to volunteers with similar roles in different parts of the country. Training to a recognised standard can support volunteers in their roles, and in some cases help them obtain insurance cover. While training is provided internally within the EA on issues around engagement, there may be a need for training that is designed specifically to help staff engage with (FCRM) volunteering.

**Pooling and sharing volunteers:** Agreements between the EA and dedicated volunteer organisations could be developed, either as 'working through others' or 'working in partnership'. Common objectives and procedures could be outlined to access teams of volunteers during severe weather events or individuals with specific skills such as four-wheel-drive vehicle use and risk assessment.

**Sharing lessons and good practice:** Improvements could be made to the internal mechanisms that facilitate organisational learning. Face-to-face seminars or meetings take time and resources, but are effective when structured to allow sharing of ideas between the EA staff working with similar types of flood event or community, and identification of actions to take forward.

**Corporate volunteering and exchanges:** Corporate volunteers from outside the EA, or from other parts of the EA, could be encouraged to volunteer for a couple of days on FCRM, e.g. habitat and vegetation management, leaflet drops, design of leaflets, and production of web information. Similarly, the EA could benefit from secondment of staff to agencies that manage volunteers to learn how it is done.

**Widening volunteer diversity:** Efforts to promote a more diverse profile of volunteers could be considered, responding proportionately to the duties placed upon public authorities under the Equality Act 2010, e.g. by taking into account the possibility that rural areas have lower populations of Black and Minority Ethnic groups.

## Conclusion

The data for this research was collected before the severe storms of the winter of 2013/14. Given the impact of these floods it could be argued that there has never been a better time to focus on the role of FCRM volunteering and its importance as part of the mixed and integrated response needed to deal with future severe weather events that are likely to occur with climate change. Communities will need to become better prepared and more resilient to flood events. FCRM volunteers already play a critical role in this endeavour. Support from the EA and the partner organisations it works with to encourage existing and new volunteers could grow and extend the positive contribution that volunteers are already making

## References and resources

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### Disclaimer

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